

TECHNOLOGY

REVIEW *November 1958*



technology review

Published by MIT

This PDF is for your personal, non-commercial use only.
Distribution and use of this material are governed by copyright law.
For non-personal use, or to order multiple copies please email
permissions@technologyreview.com.

Right off the Wire

A miniature record player only four by eight inches is capable of playing twelve inch records.

The record of many thousands of electrical installations shows that the use of TIREX cords and cables provides an extra measure of employee safety.

A new process removes helium from natural gas, in which it is a contaminant, by passing the gas through glass pipes, through the walls of which the helium is filtered.

An atomic-powered train has been designed that will travel across country without tracks. It has fifty-two wheels, each of which is electrically driven.

The plastic base of a new electric coffee pot completely encloses and waterproofs both heating element and thermostat.

Titanium alloyed with rana-
dium, chromium and aluminum makes a new alloy that is said to have the greatest strength for its weight of any structural material.

A complete picture, ready for transmission, is provided by a new transistorized television camera. It weighs only four pounds, including self-contained control and synchronizing units.

A radio telescope over four-hundred feet in diameter is planned for the hills of West Virginia.

Weather information can be transmitted over a thousand-mile range by an automatic radio station which can be dropped anywhere by an airplane.

An automatic electronic inspection machine makes a four-way check of automobile valves at the rate of 3,000 per hour with a tolerance of five millionths of an inch.

An adhesive has been developed that will retain a metal-to-metal bond at temperatures as low as -253 degrees C.

All cords and cables give better service when handled properly. TIREX® portable cords and cables, although jacketed with fortified and tempered neoprene armor and "lead cured" for toughness and smoothness, will give still longer service if not subjected to unreasonable abuse.

By making jet nozzles radioactive and measuring the radiation from the fuel passing through them, the amount of wear can be measured to within one millionth of a gram per hour.

Further information on these news items and on Simplex cable is available from any Simplex office. Please be specific in your requests.

A miniature battery which is reported to last for five years, uses the radioisotope Promethium 147. It is suitable for hearing aids, watches or missile guidance systems.

In California, it is proposed to use underground steam to generate electricity as is being done in Italy and New Zealand. Wells are now being drilled and a yield of 100,000 kilowatts is anticipated.

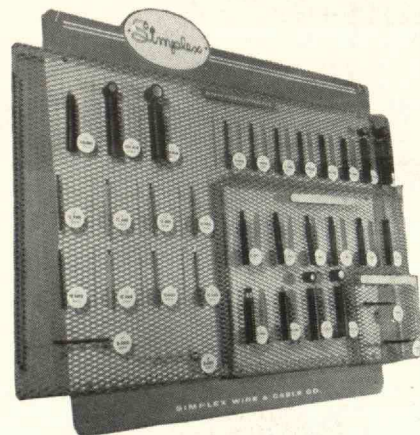
Two radio manufacturers have built extra service into their sets. One warns of approaching tornadoes and the other acts as a radiation detector.

Deuterium, or heavy hydrogen, is concentrated by some bacteria from sea water. This discovery may lead to a new and inexpensive method of producing the heavy water used in reactors.

The area behind the eye that can not be examined by other instruments can now be seen by a device that uses penetrating sound waves and converts their reflection into light.

A disposable medicine container of heat-proof plastic doubles as a hypodermic syringe.

Our atmosphere at an altitude of sixty miles is now known to contain chemicals which could serve as an unlimited fuel supply for ramjet engines.



What's in a name?

The character and business integrity of distributors are measured to a great extent by the products they handle. More than 1000 of the nation's most successful electrical firms — offering the utmost in customer service and satisfaction — recommend and sell Simplex TIREX cords and cables.

SIMPLEX WIRE & CABLE CO.
Cambridge, Massachusetts and
Newington, New Hampshire

Simplex

Highest quality cables for: Mining
Power & Lighting • Construction
Transportation • Communications
Signalling



A-C Linear Accelerometer, Type LA-600, for aircraft and missiles. Shown actual size.

NEW LINEAR ACCELEROMETER

FEATURES FRICTIONLESS OPERATION

for greater accuracy, ruggedness and reliability

NEGLECTIBLE
CROSS COUPLING

A-C VARIABLE
RELUCTANCE PICK-OFF

MAGNETIC
DAMPING

OPERATING
TEMPERATURE -65°F to +250°F

NO WARM-UP
TIME REQUIRED

HERMETICALLY
SEALED

In the Honeywell A-C Linear Accelerometer, Type LA-600, friction introduced through bearings and potentiometer slide wires is eliminated. This unit consists of a non-pendulous seismic mass supported on a frictionless spring suspension and incorporates an a-c variable reluctance type pick-off.

Inherently insensitive to cross-coupling accelerations both when at null and when at an acceleration along its sensitive axis, the Type LA-600 also features magnetic damping for near-constant damping ratio throughout its wide range of operating temperatures. Mechanical stops prevent damage from input accelerations beyond the specified full scale range. Write for Bulletin LA-600, Minneapolis-Honeywell, Boston Division, Dept. 1, 40 Life Street, Boston 35, Mass.

Honeywell



Military Products Group

DESCRIPTIVE DATA

FULL SCALE RANGE: ± 0.5 to ± 40 G

FULL SCALE OUTPUT: Up to 10v, 400 cps into 100 K load; Up to 8v, 400 cps into 10 K load

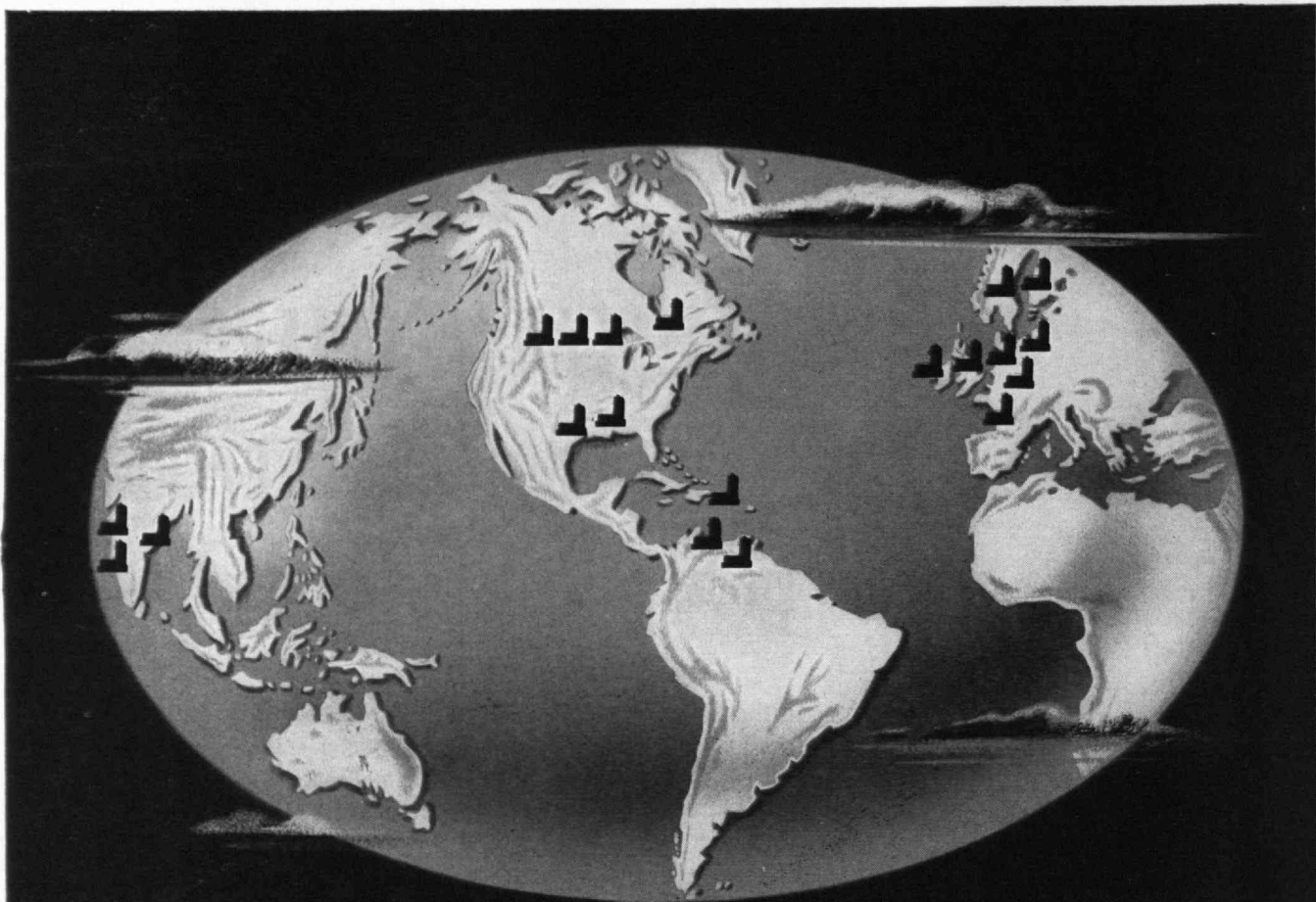
THRESHOLD-RESOLUTION: .0001G

CROSS-AXIS SENSITIVITY: .005G maximum

VIBRATION: 10G, 0-2000 cps

SHOCK: Up to 60 G

WEIGHT: 1.2 pounds maximum



LUMMUS ENGINEERS AND CONSTRUCTS 20 COMPLETE REFINERIES SINCE END OF WORLD WAR II

World-wide Lummus Organization also completed hundreds of other units in same period . . . From Cardon, Venezuela, to Bombay, India—from Corpus Christi, Texas, to Turku, Finland—this string of modern “grass-roots” refineries testifies to the engineering skill of the Lummus staff. That staff includes over 3,000 permanent employees, located in seven branch offices and subsidiaries throughout the world.

When you plan a new facility—oil refinery, chemical or petrochemical plant—Lummus can put 50 years of experience on more than 700 process-industry plants throughout the world to work for you.



1. Refinery for Compañía Shell de Venezuela at Cardon, Venezuela
2. Refinery for Koppstrans Oljeaktiebolag at Gothenburg, Sweden
3. Refinery for Venezuela Gulf Refining Company at Puerto La Cruz, Venezuela
4. Refinery for Societe Generale des Huiles de Petrole at Dunkirk, France
5. “Portable” refinery for U. S. Navy Department
6. Lube oil refinery for Cit-Con Oil Corporation at Lake Charles, Louisiana
7. Refinery for International Refineries Inc. at Wrenshall, Minnesota
8. Refinery for Vacuum Oil Company Ltd. at Coryton, England
9. Refinery for Burmah-Shell Oil Company at Bombay, India
10. Refinery for Standard-Vacuum Oil Company at Bombay, India
11. Refinery for Standard Oil Company (Indiana) at Mandan, North Dakota
12. Refinery for Suntime Refining Company at Corpus Christi, Texas
13. Refinery for Commonwealth Refining Company at Ponce, Puerto Rico
14. Refinery for Esso Standard Oil Company at Antwerp, Belgium
15. Refinery for Caltex at Visakhapatnam, India
16. Refinery for Neste Oy at Turku, Finland
17. Refinery for Irish Refining Co., Ltd., Cork, Ireland
18. Refinery for Esso Standard Française, Bordeaux, France
19. Refinery for Purfina Mineraloelraffineria A.G., Duisburg, Germany
20. Refinery for B. P. Canada Limited, Ville d'Anjou, Montreal, P.Q., Canada

THE LUMMUS COMPANY, 385 MADISON AVENUE, NEW YORK 17, N.Y.

CHICAGO • WASHINGTON, D. C. • HOUSTON • MONTREAL • CARACAS • MARACAIBO • LONDON • PARIS • THE HAGUE

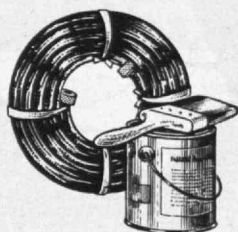
THE TECHNOLOGY REVIEW

... tires or toys



... ribbons or ropes

... house paints or hoses



Better Products begin with CABOT!

It's truer today than ever — no product has a monopoly on quality.

As competition stiffens in many fields, the manufacturer's search for a meaningful product *difference* — one that will put a hefty *plus* in sales — must begin with the wisest possible choice of raw materials.

It is here that Cabot, with its 75 years experience in supplying superior raw materials to industry, can be of immense help — whether you make house paints or garden hoses. From the wide variety of Cabot materials... from our extensive experience in raw material problems... may come the product plus you've been looking for.

It costs you nothing to find out if Cabot can help you... why not call us today?

WHICH OF THESE CABOT MATERIALS CAN HELP YOUR PRODUCT?

CABOT CARBON BLACKS . . . more than 45 different grades of channel, furnace and thermal blacks for use by the rubber, printing ink, paint, varnish, lacquer, enamel, plastics, paper, phonograph record, battery and other industries.

WOLLASTONITE . . . as a paint pigment, this white, uniform calcium metasilicate, has more desirable properties than other extenders used singly or in combination. Excellent for ALL types of paint, and for the quality improvement of wall tile and semi-vitreous ceramics.

CAB-O-SIL® . . . this unique colloidal silica, in extremely small quantities, greatly improves large numbers of products. The best flow control agent available, it's especially remarkable for its

unusual combination of properties. Used for rubber, paint, varnish, printing ink, plastics, lubricants, cosmetics, many other products.

PT® PINE TAR PRODUCTS . . . these versatile quality controlled materials improve the performance of a wide variety of products, including: rubber, paint, cordage, oakum and insecticides.

For complete information, phone or write:

GODFREY L. CABOT, INC. CABOT
77 FRANKLIN ST., BOSTON 10, MASSACHUSETTS
Phone: Liberty 2-7300

NEW APPROACH TO "OLD" MATERIALS

By today's standards, the "old" refractory metals are outdated. The ultimate in high-temperature studies of 10 years ago is several generations behind in terms of modern aircraft and missile development.

Today's material requirements surpass anything envisioned 10 short years ago. Molybdenum and beryllium, for example, are still exciting metals with much promise for space vehicles and ultra-high-speed aircraft. It now appears, however, that the full promise of such metals may be fulfilled when they are used, not alone, nor as alloys, but when combined with other materials to form totally new types of structural materials.

Such a "marriage" of metals, ceramics and plastics is a promising approach to high-temperature problems that is being vigorously pursued at Avco. It opens new potential applications for many exotic combinations.

These bold steps forward are possible at Avco, where materials research includes concurrent basic studies and applied research, plus developmental programs that extend through the solution of processing and testing problems.

The search for new knowledge goes forward simultaneously with the creation of advanced technology at Avco's Research and Advanced Development Division. The creative man, whether he is interested in basic studies or practical problems, finds his effort enhanced by the stimulus of interdisciplinary contact and feedback from other related fields.

Research and Advanced Development is more than a descriptive title at Avco. It is a concept that promotes creativity.

AVCO

Research and Advanced Development
division

For information on unusual career opportunities for exceptionally qualified scientists and engineers, write to: Dr. R. W. Johnston, Scientific and Technical Relations, Avco Research and Advanced Development Div., 201 Lowell Street, Wilmington, Mass.



For Career Opportunities in Nuclear Energy... Look to **M & C NUCLEAR, INC.**

With six years of experience in producing nuclear fuel to meet the needs of a progressing industry, M & C has developed techniques for manufacturing many types of fuel elements. In addition to fuel assemblies for reactors, M & C supplies the nuclear industry with complete reactor cores, core components, and fabricates a variety of materials into tube, disc, foil and plate forms for nuclear experiments.

M & C Nuclear, Inc. is growing to meet the expanding requirements of the nuclear industry and, as an important part of this growth, scientifically trained people are needed — people experienced in the metallurgical, mechanical, or industrial fields. Experience in atomic energy is desirable, but is not a fundamental requirement.

For more information, write or call the Employment Director.

MIT ALUMNI

Michael Anthony	1932
Chester Avery	1923
Frank Binns	1951
William Clemons	1950
Kenneth Fettig	1957
Robert Flanders	1958
Harold Friedman	1956
Robert Glidden	1926

Herbert Graetz	2-1944
Daniel Hamilton	1954
Roger Hood	1945
Donald Hurter	1945
Edward Jastram, Jr.	1935
Peter Lynch, Jr.	1958
John Medgyesy	1952
Robert Packard	1953
Charles Patterson	1945

John Reynolds	1952
Robert Seavey	1942
Frederick Stearns	1946
A. Graham Sterling, Jr.	1949
Robert Teeg	1958
Marvin Turkanis	1953
George Williams	1939
Carroll Wilson	1932
John Wilson	1941

M & C
P. O. BOX 898



NUCLEAR, INC.
ATTLEBORO, MASSACHUSETTS

FUEL ELEMENTS, CORE COMPONENTS, COMPLETE CORES •

THE TIME INDICATOR UNIT

accurate to 1 second in 12 days



TIMES MODEL TS-3 CHRONOMETER

Program timer, pulse generator and clock. Timing assemblies, driven by the clock motor, provide momentary contact closings at rate of

• ONCE A SECOND • ONCE A MINUTE • ONCE AN HOUR

also optional frequency or pulse outputs as specified in range between 10 and 1000 cps.

PRICE: \$950.00, F.O.B. Factory.

Optional frequency output, \$50.00 each.

Write for details.

TIMES FACSIMILE CORPORATION
540 West 58th Street, New York 19, N. Y.

A. G. Cooley
Class of 1924



Twin-shell, triple-lane, single-pass Condenser with 187,000 sq. ft. capacity. One of largest units ever built, it was recently installed at large eastern utility.

In tube layout, too... design makes the difference with C. H. Wheeler condensers

You see here one of the many reasons why C. H. Wheeler Dual Bank Surface Condensers operate so efficiently in scores of public utilities and industrial plants throughout the country.

Triple Lane Tube Layout, with three separate pathways for steam travel, allows the steam to penetrate to the peripheries of all tubes.*

Design like this, typical of C. H. Wheeler engineering, steps up condenser efficiency. Other engineering advancements—such as patented Reverse Flow, which permits flushing away leaves,

twigs, algae and other foreign matter—reduce maintenance requirements. "Zero" condensate temperature depression, pure condensate and deaeration to 0.03 cc. of oxygen per liter (special design provides for deaeration to 0.01 cc. of oxygen per liter) . . . are

additional features you get with C. H. Wheeler Condensers.

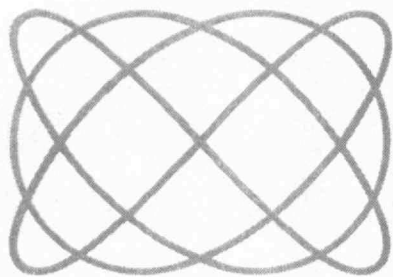
**Location of the air-vapor take-off reduces the resistance to steam passage. This minimizes the depth of steam penetration through the tube bank of all C. H. Wheeler Condensers.*

C. H. WHEELER MFG. CO.

19th and Lehigh Avenue • Philadelphia 32, Pennsylvania

Whenever you see the name C. H. Wheeler on a product, you know it's a quality product

Steam Condensers • Steam Jet Vacuum Equipment • Centrifugal, Axial and Mixed Flow Pumps • Marine Auxiliary Machinery • Nuclear Products



PHYSICISTS ENGINEERS MATHEMATICIANS

are invited to join the Lincoln Laboratory scientists and engineers whose ideas have contributed to new concepts in the field of electronic air defense.

A brochure describing the following Laboratory programs will be forwarded upon request.

HEAVY RADARS
MEMORY DEVICES
TRANSISTORIZED DIGITAL COMPUTERS
SCATTER COMMUNICATIONS
SOLID STATE
AEW (air-borne early warning)
SAGE (semi-automatic ground environment)
SYSTEMS ANALYSIS

In certain of these programs, positions of significant professional scope and responsibility are open to men and women with superior qualifications.



Research and Development

MIT

LINCOLN LABORATORY
BOX 28
LEXINGTON 73, MASSACHUSETTS

THE TABULAR VIEW

Report. — Always a stimulating and thought-provoking communication, the Annual Report of the President to members of the M.I.T. Corporation is prepared this year by J. A. STRATTON, '23, Acting President. In devoting a major portion of his significant message to general problems of higher education, Dr. Stratton summarizes (page 29) the plight of American colleges in the words: "The most fundamental problem, and the most difficult with which to cope, is the widening gap between the mean level of academic achievement in the average American secondary school on the one hand and the intellectual maturity of our top graduate professional schools on the other . . . The task of bringing even the most talented undergraduate student, in four years, to such a point of intellectual maturity that he may deal effectively either with the requirements of the top-rate graduate school or with the pressures of modern industry is a great and difficult one." With particular effectiveness since his appointment as Provost at M.I.T., Dr. Stratton has long emphasized quality in education.

Dr. Stratton received the S.B. and S.M. degrees from M.I.T. in 1923 and 1926, respectively, and the D.Sc. degree in 1927 from the Eidgenossische Technische Hochschule of Zurich. He served as a member of the Institute's Faculty for many years, and following World War II established the M.I.T. Research Laboratory of Electronics, and served as its head until 1949 when he was appointed to the newly created post of Provost. He became vice-president in 1951, chancellor in 1956, and acting president in 1957.

(Concluded on page 10)



America's largest Manufacturer of Filter Papers for Science and Industry

The Eaton-Dikeman Company

FILBERTOWN
MOUNT HOLLY SPRINGS, PENNSYLVANIA

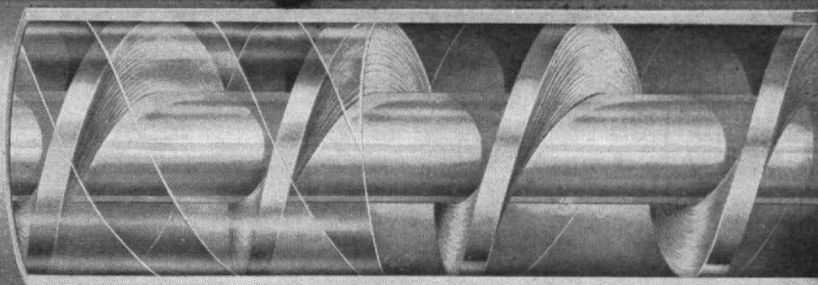
*E. H. Olmstead, President
Class of 1937*

- No radiation
- Low attenuation
- Excellent frequency response

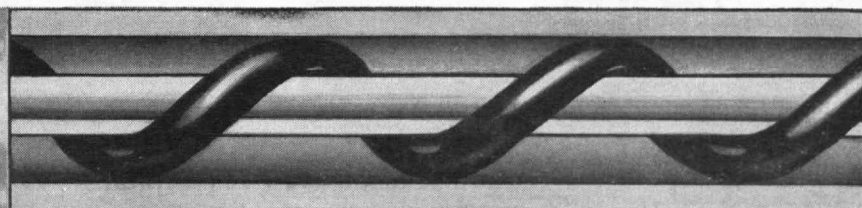
- Uniform electrical properties over wide temperature variations
- Unlimited operating life
- Continuous 1000' lengths

These are the Features of the
FINEST LINE OF HIGH FREQUENCY CABLES
IN THE COMMUNICATIONS FIELD!

Styroflex
 COAXIAL
 CABLE



Spirafil
 COAXIAL
 CABLE



Foamflex
 COAXIAL
 CABLE

CABLE 1/2 50Ω



PHELPS DODGE COPPER PRODUCTS
CORPORATION

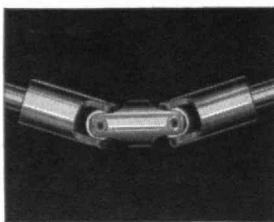
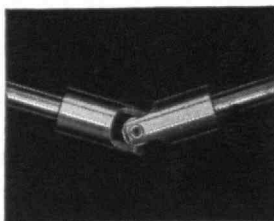
300 PARK AVENUE, NEW YORK 22, N. Y.

How Curtis helped a design engineer "BEAT THE HEAT"

This single universal joint in a ribbon-stripping machine was operated at a 34° angle. The joint heated up, wear was excessive. (Curtis Joints have been tested at angles up to 37°, but we do not recommend angles greater than 30°.)

Curtis engineers recommended a double Curtis joint, which reduced the angle to 17° per joint. Result: no overheating, improved efficiency, longer life.

You can depend on Curtis engineering in any problem of angular power transmission. And you can depend on



CURTIS UNIVERSAL JOINTS because our catalog torque and load ratings are substantiated by constant tests under production conditions.

14 SIZES ALWAYS IN STOCK
3/8" to 4" O.D.
(6" joints on special order)

Not sold through distributors. Write direct for free engineering data and price list.

TRADE
MARK

CURTIS
UNIVERSAL JOINT CO., INC.

8 Birnie Avenue, Springfield, Mass.

As near to you as your telephone

EXCLUSIVELY A MANUFACTURER OF UNIVERSAL JOINTS SINCE 1919



GEARS

Made to Your
Specifications

You and we can form a team—you to draw up the specifications; we to make the gears—that will be profitable to both of us. Gears of all types, all sizes, all materials. Design-engineering service available.

Custom Gears
Exclusively

**DIEFENDORF GEAR
CORPORATION**

Syracuse 1, N. Y.

DIEFENDORF
GEARS

THE TABULAR VIEW (Concluded from page 8)

Progress. — Despite the fact that rumblings about the American educational system had been going on for years, it was only when Sputnik I reached orbit a year ago, that the public as a whole, took cognizance of this important problem. The progress in science and education that has been made in the past 12 months is recorded (page 33) by ALAN T. WATERMAN, Director of the National Science Foundation, who concludes that, "We have only made a beginning: the major job is still to be done. . . . In this modern world there can be no relaxation of our determination to compete successfully and continuously." Dr. Waterman was educated at Princeton University, from which he received the A.B. degree in 1913, the A.M. degree in 1914, and the Ph.D. in 1916. After teaching physics at Yale University for the period between the two World Wars, Dr. Waterman became chief scientist of the Navy's Office of Naval Research, was a member of the Office of Scientific Research and Development, and, in 1948 received the Medal for Merit. Upon the establishment of the National Science Foundation, Dr. Waterman was named its director. He is a fellow of the American Association for the Advancement of Science, American Physical Society, and the American Association of Physics Teachers.

Tour — At one time or another the Institute has been variously described as "a place not for boys to play but for men to work" or as a "university polarized around science." In recent years, emphasis has been placed on training "the whole man" and no better example of this objective is to be found than in the Institute's musical activities. This summer, for the second time, the M.I.T. Choral Society toured Europe where its performances in France, Belgium, and Germany were enthusiastically received. The saga of the Society's air trip to Europe and back is recounted (page 35) by ALICE JEGHELIAN, Secretary to the Institute's Dean of Students, John T. Rule, '21. Miss Jeghelian holds an A.B. degree from Mount Holyoke College and has been active in the Choral Society for several years. Last year she was secretary, and this year is president of this M.I.T. musical activity.

Chas. Pfizer & Co., Inc.,
Research Laboratories
Shreve, Lamb & Harmon
Associates, Architects



Speed and Economy

The quality of our construction service can be judged by the fact that, year after year, approximately 70% of our business comes from companies for whom we have built before.

If you are contemplating building, we believe it will pay you to consult us.

W. J. BARNEY CORPORATION

Founded 1917

INDUSTRIAL CONSTRUCTION

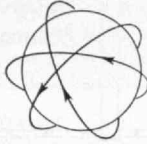
101 Park Avenue, New York

Alfred T. Glassett, '20, President

Progress in the Science of Chronometry

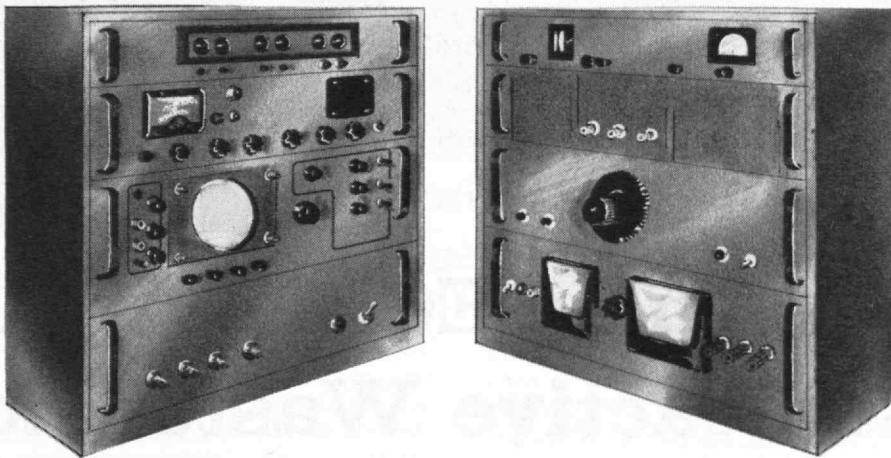


IN 1714, the British government offered a prize of £20,000 for any means of determining a ship's longitude within 30 nautical miles at the end of a six week's voyage. John Harrison, a self-educated Yorkshire carpenter, won the prize in 1760 with an accurate clock.



IN 1958, ICBMs and earth satellites created the need for new concepts in accurate timing. To fill this need, Hycon Eastern has developed an electronic Timing System with heretofore unattainable timing precision capable of operating anywhere in the world.

AN INTEGRATED TIMING SYSTEM FOR TODAY'S GLOBAL CONCEPTS



Solar or sidereal time is displayed visually and is available for input to automatic computers and indexing data with many types of recorders . . . magnetic tape, oscillograms, photographs and strip charts. Furnishing a time scale with resolutions available to one microsecond, this system is ideally suited for tracking and control of missiles, astronomical measurements, and navigation systems. Write for Bulletin TS-00.



HYCON EASTERN, INC.

75 Cambridge Parkway

Dept. H

Cambridge 42, Massachusetts

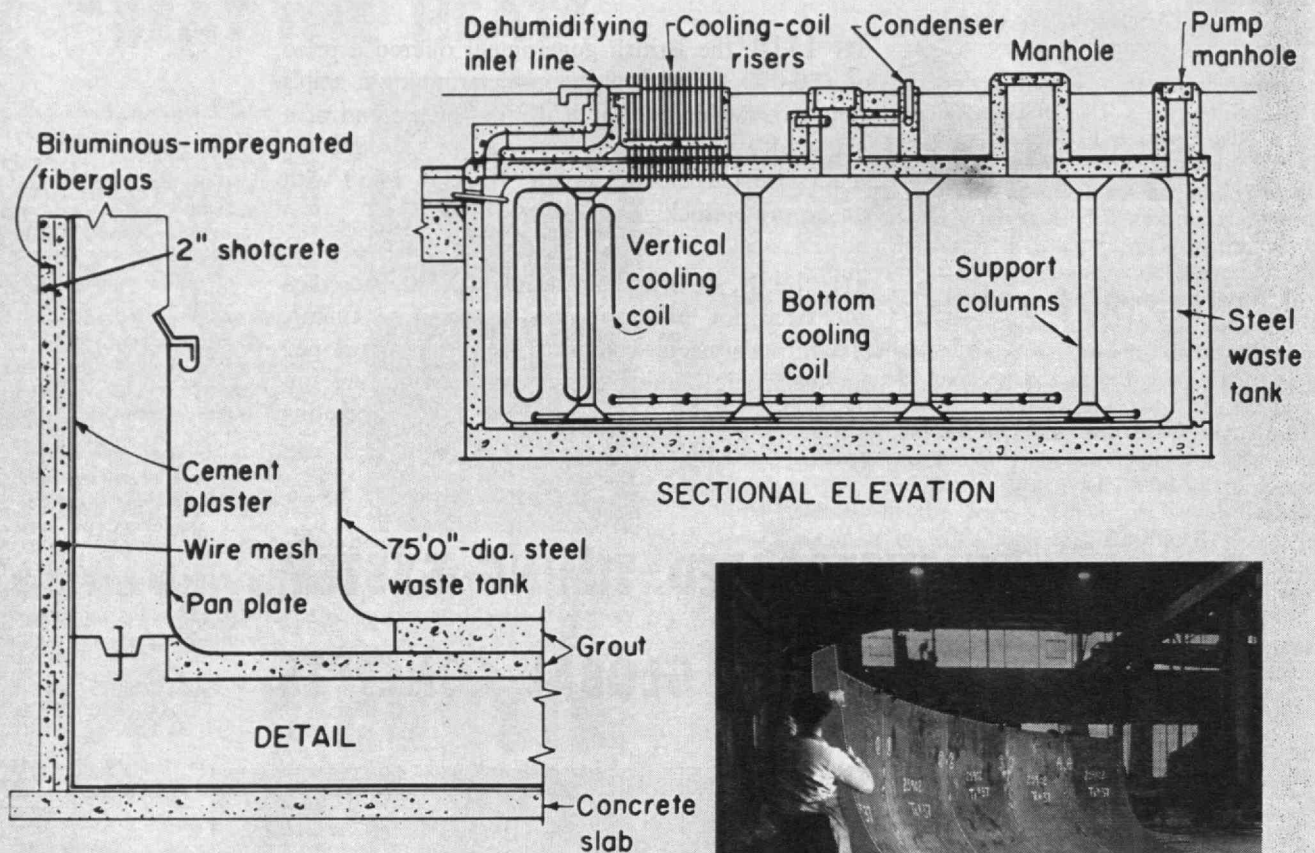


Diagram reprinted with permission from NUCLEONICS

One AEC Solution To Radioactive Waste Storage

Storing radioactive wastes underground in huge 750,000 gallon double-bottomed steel tanks, as shown above, is one solution to the waste disposal problem at the AEC installations at Savannah River, S. C. and Hanford, Wash. Internal cooling coils take away the heat generated by radioactive decay. Remote handling protects personnel from high activity levels.

Graver has fabricated and erected sixty-eight such waste storage tanks for these nuclear installations. Special fabricating methods and field-erection techniques were required. For example, shop fit-up of the curved bottom plates expedited field assembly of the tanks.

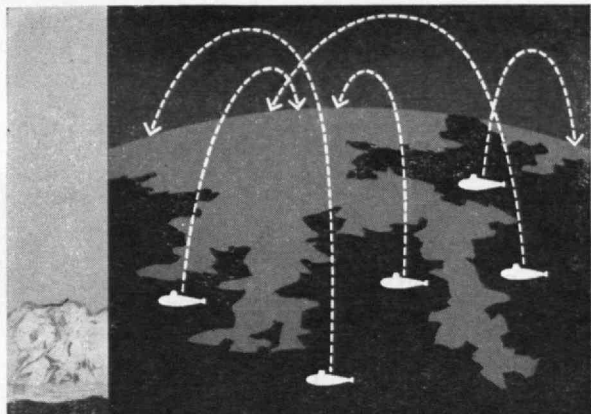
The century-long experience of Graver in fabricating steels and alloys for a huge variety of processing equipment, pressure vessels and storage tanks admirably qualifies it to build for the future with America's important nuclear industry.

GRAVER®

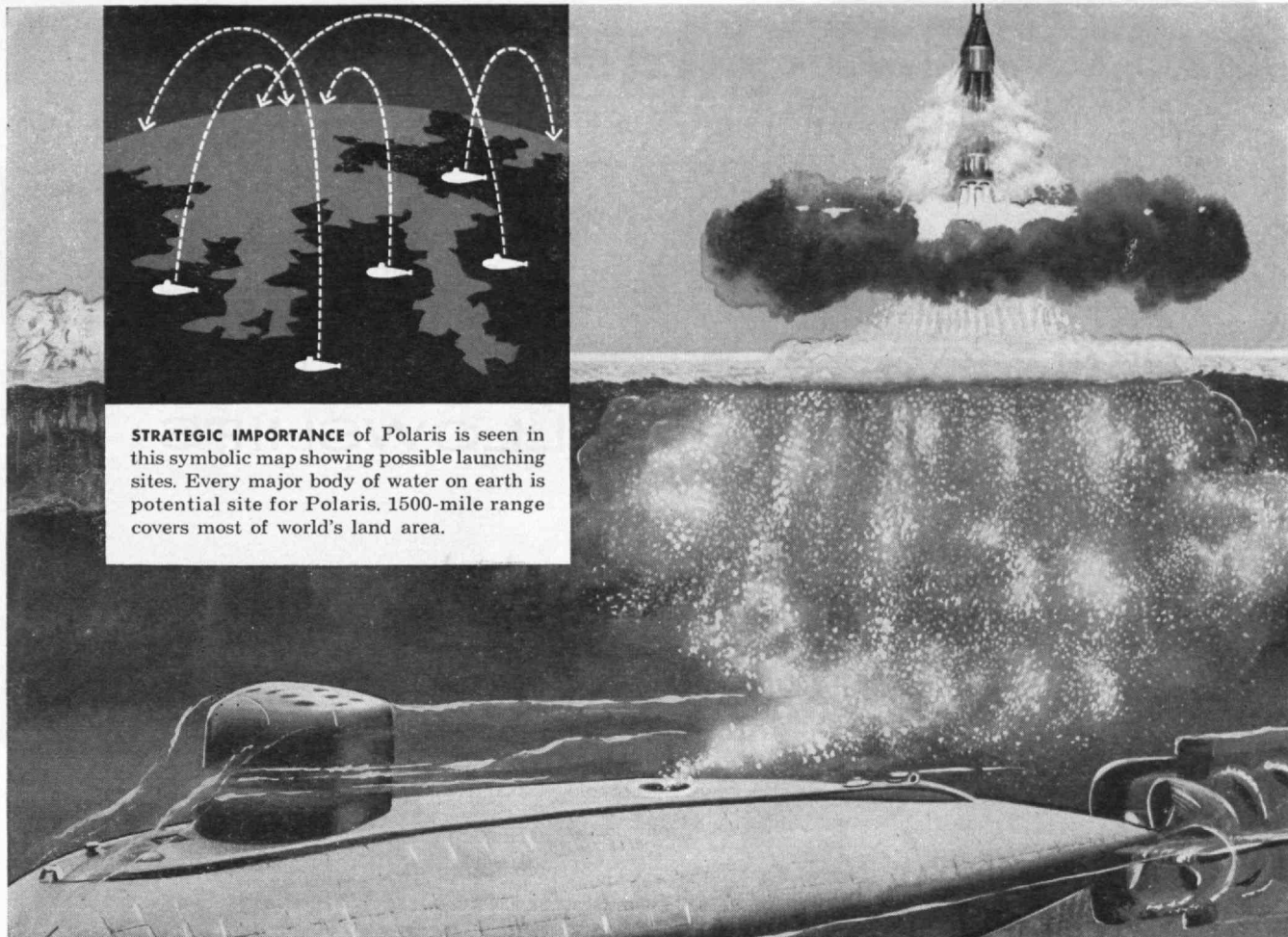
*Building for the Future on
a Century of Craftsmanship
in Steels and Alloys*

GRAVER TANK & MFG. CO., INC.

EAST CHICAGO, INDIANA • New York • Philadelphia
Edge Moor, Delaware • Pittsburgh • Atlanta • Detroit • Chicago
Tulsa • Sand Springs, Oklahoma • Houston • New Orleans
Los Angeles • Fontana, California • San Francisco



STRATEGIC IMPORTANCE of Polaris is seen in this symbolic map showing possible launching sites. Every major body of water on earth is potential site for Polaris. 1500-mile range covers most of world's land area.



CAREER ENGINEERS

Another example of diversified work available to engineers at SPERRY

Sperry offers you the kind of work engineers thrive on — big assignments, interesting, important, diversified. Assignments connected with world-famous projects like the Polaris Missile. Launching a missile at a distant target from a maneuvering atomic sub presents extraordinary navigation problems. Location of the sub must be known precisely. To provide exact navigation data, Sperry is developing for the Navy advanced electronic and gyroscopic systems that will stabilize the sub, continuously establish its precise position and true speed, and feed target data automatically into the missile's guidance system.

That's the kind of assignment you will get, at Sperry. The kind of assignment that puts you side-by-side with some of America's foremost engineers. The kind of assignment that not only offers you a good job *now*, but also exceptional opportunity for advancement. Sperry engineers are career engineers. They grow with the firm — and Sperry has a remarkable record of almost a half century of continuous growth! No wonder most of our top men are engineers who have worked their way up. Our present production and future potential are both at record levels. Check Sperry — now!

If you're interested in an engineering career, CHECK SPERRY

Stimulating Professional Opportunities Exist in Many Fields Including:

INERTIAL NAVIGATION SYSTEMS
DOPPLER NAVIGATION • RADAR RECEIVERS
RADAR TRANSMITTERS • INFRARED SYSTEMS
PULSE CIRCUITS • GYROSCOPICS
ELECTRONIC PACKAGING
TRANSISTOR CIRCUITS *For Pulse & Video Applications*
MICROWAVE ANTENNA DESIGN

*Confidential
Interviews*

Contact
Mr. J. W. Dwyer
Employment Manager

*Saturday
Interviews*

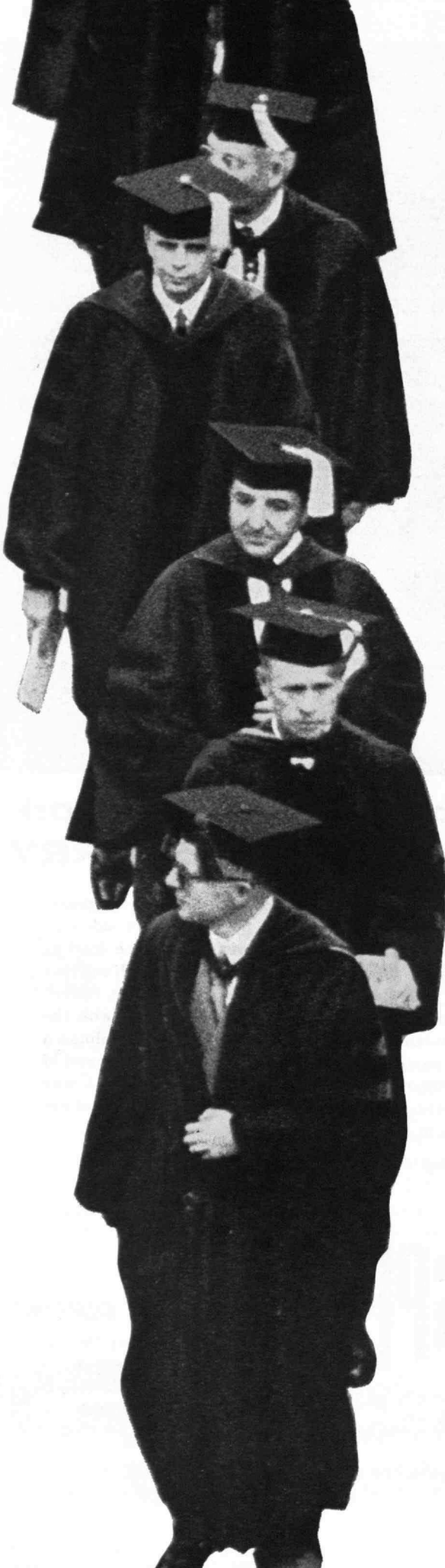
8 A.M. To 1 P.M.
Arranged by
Appointment

SPERRY

GYROSCOPE COMPANY

Division of Sperry Rand Corp.

GREAT NECK, LONG ISLAND, N. Y.
Fieldstone 7-3665



HOWARD HUGHES DOCTORAL FELLOWSHIPS

If you are interested in studies leading to a Doctor of Philosophy or Doctor of Engineering degree or in post-doctoral research, you are invited to apply for one of the ten awards in the Howard Hughes Fellowship Program.

This unique program offers the doctoral candidate the optimum combination of high-level academic study at California Institute of Technology, and practical industrial experience in Hughes laboratories.

The Howard Hughes Doctoral Fellowship provides an annual award of approximately \$7200, of which \$1800 is for tuition, books and research expenses. The remainder is the award of a cash stipend and salary earned by the Fellow.

You should plan to pursue research in the fields of Electronics Engineering, Microwave Physics, Mechanical Engineering, Electron Dynamics, Electronic Computing, Physical Electronics, Propulsion Engineering, Solid State Physics, Aerodynamics, Analytical Mechanics or Information Theory.

The Fellowships are open to students qualified for admission to graduate standing. A Master's Degree or equivalent graduate work must have been completed before beginning the Fellowship Program.

Application closing date: January 15, 1959

HOW TO APPLY: *For information concerning this Hughes program, write to: Office of Advanced Studies, Hughes Aircraft Company, Culver City, California.*

The classified nature of Hughes work makes ability to obtain security clearance a requirement.

the West's leader in advanced electronics

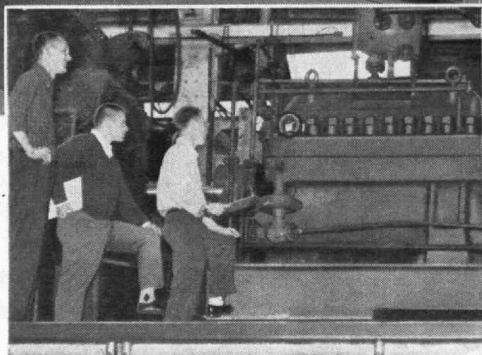
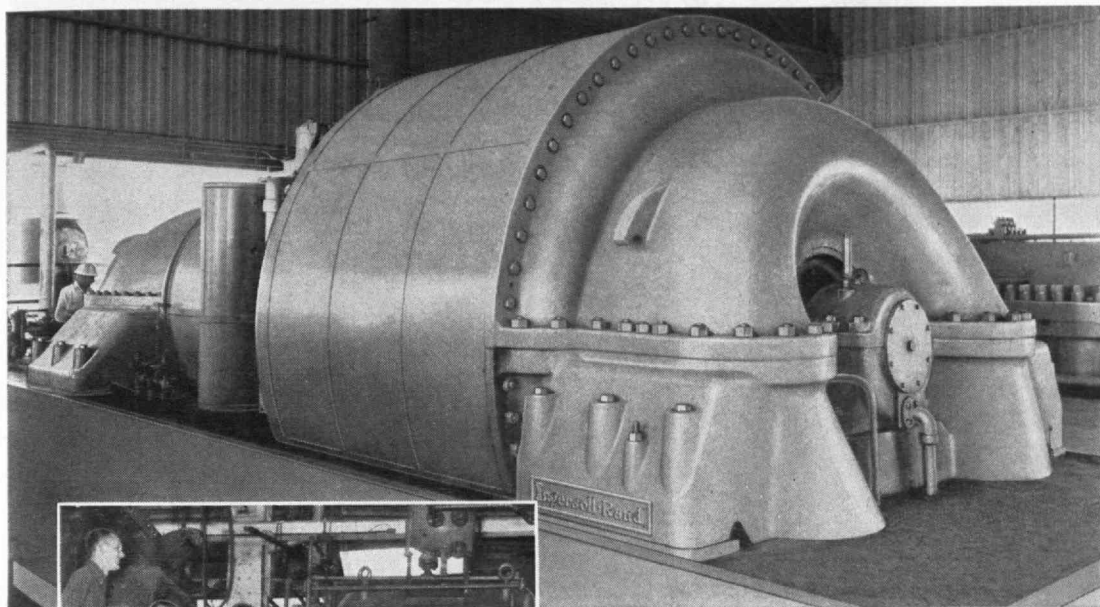
HUGHES

Hughes Aircraft Company, Culver City, California

© 1958. H. A. C.

YOUR ENGINEERING CAREER

with **INGERSOLL-RAND**



ABOVE: This huge I-R Turbo-Blower is the largest cat-cracking air blower ever built. It delivers 161, 500 cfm of 30 psi air at Tidewater Oil Company's new Delaware refinery, and is driven by an 11,250 hp I-R steam turbine.

LEFT: Engineering trainees at Ingersoll-Rand's Phillipsburg, N. J., plant check final performance tests on another blower of smaller size and higher pressure.

Here's What Blower Engineering at Ingersoll-Rand can mean to you...

WHEREVER industry needs large volumes of compressed air or gases—for steel mill blast furnaces, refinery catalytic cracking units and other petroleum and chemical processes—you'll find Ingersoll-Rand centrifugal blowers on the job. These huge units, delivering thousands of cubic feet per minute, 24 hours a day, are the very heart of our vital process industries.

This means that blower engineering offers you challenging opportunities in a field of major importance. There is a need for every type of creative engineering ability in the

design, development and application of such specialized industrial machinery.

Ingersoll-Rand also manufactures the industrial equipment shown at the right. All require a high order of engineering in their design, manufacture and sale.

If you are looking for a leadership career with excellent opportunities for advancement, you'll find it at Ingersoll-Rand. For further details, contact your Placement Office, or write to Ingersoll-Rand, 11 Broadway, New York 4.

OPPORTUNITIES FOR ENGINEERS

- Sales Engineering
- Production Engineering
- Design Engineering
- Business Engineering

Ingersoll-Rand

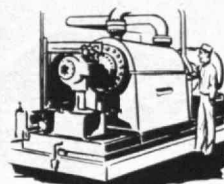
12-745

11 Broadway, New York 4, N. Y.

Among the many graduates of Massachusetts Institute of Technology at Ingersoll-Rand are:
L. C. Hopton, 1926, First Vice-President and Secretary; P. J. Bentley, 1925, Vice-President.



also means
LEADERSHIP
in



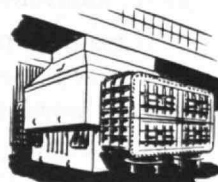
Centrifugal Pumps



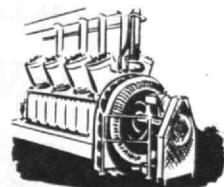
Rock Drills



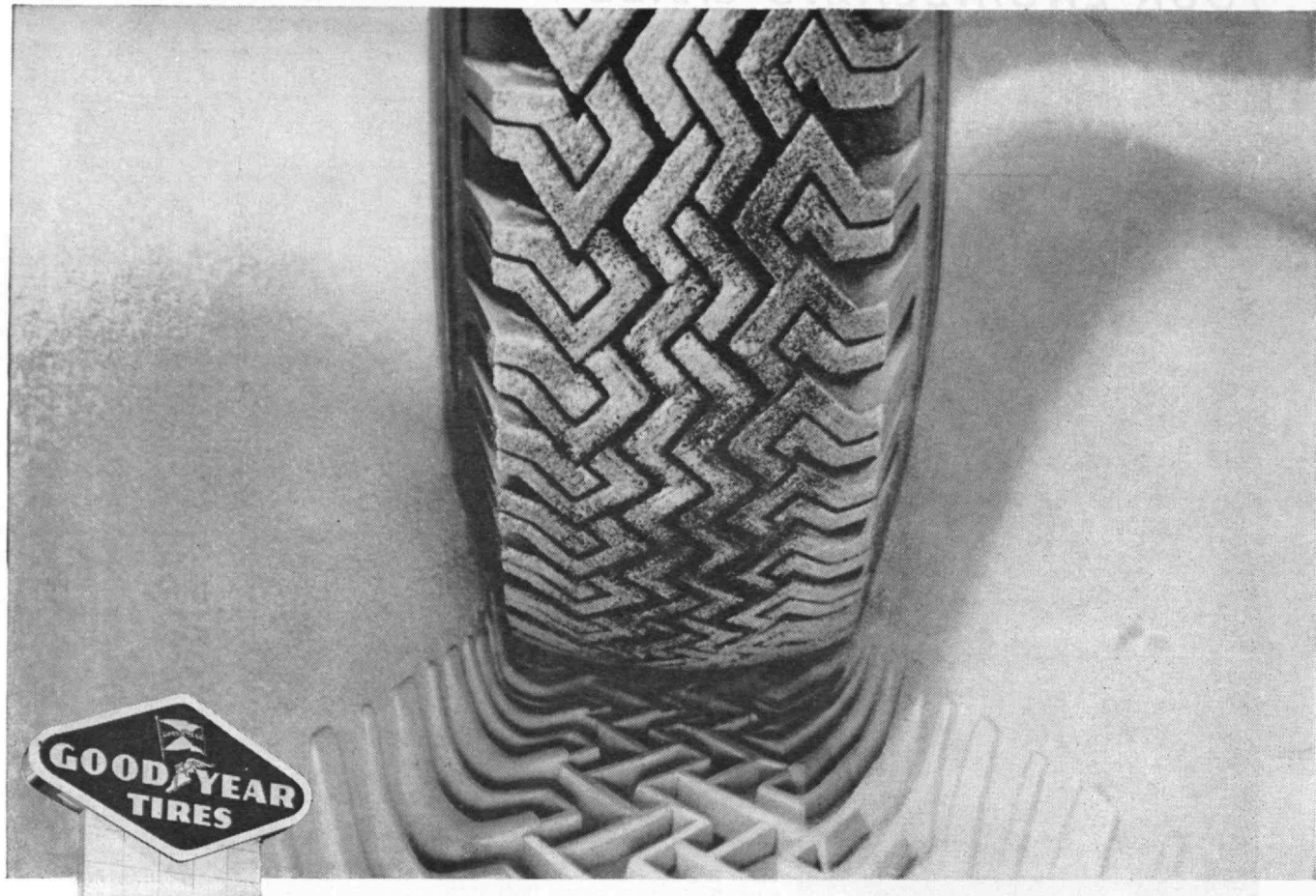
Air & Electric Tools



Steam Condensers



Diesel & Gas Engines



Bites through snow that's HUB-CAP DEEP!

ALL-NEW SUBURBANITE BY GOODYEAR

- Up to 51% more traction in snow • Up to 17% better traction in mud
- Quieter ride on dry roads • An extra season of wear for many motorists



Goodyear engineers took many promising experimental winter tire designs up to the Hudson Bay area and tested them under the severest winter conditions. Out of these toughest of tests came the diamond anniversary Suburbanite—the greatest winter tire made.

These tests proved that this great new tire provides DYNAMIC TRACTION . . . *extra grip under power* . . . to answer your winter driving worries—snow-covered hills, steep driveways, slippery spots, snowed-in parking places.

You'll find that this is the tire to get you through all kinds of winter weather—the all-new 3-T Suburbanite. See it at your Goodyear dealer's now. Goodyear, Akron 16, Ohio.

ALL-NEW 3-T SUBURBANITE

GOODYEAR

MORE PEOPLE RIDE ON GOODYEAR TIRES THAN ON ANY OTHER KIND!

Watch "Goodyear Theater" on TV every other Monday evening.



Suburbanite, T. M., The Goodyear Tire & Rubber Company, Akron, Ohio

THE TECHNOLOGY REVIEW

THE TECHNOLOGY REVIEW

EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

CONTENTS for NOVEMBER, 1958, Vol. 61, No. 1

AUTUMN IN STOWE, VT. Front Cover
Photograph by Ward Allan Howe

CONTROL BOARD OF M.I.T. NUCLEAR REACTOR Frontispiece 18
Photograph by M.I.T. Photographic Service
First stationary reactor to go into operation in New England is built by M.I.T. for training and research purposes

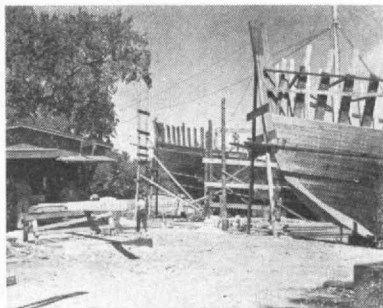
PRESIDENT'S ANNUAL REPORT By J. A. Stratton 29
Today's colleges face a growing challenge in filling the widening gap between high school and professional graduate school training

U.S. PROGRESS IN SCIENCE AND EDUCATION By Alan T. Waterman 33
Whatever may be our major national goals, it becomes first necessary to achieve better education, better science, better technology

ON TOUR WITH THE M.I.T. CHORAL SOCIETY By Alice Jeghelian 35
The second European tour of the Choral Society demonstrates that art and science are compatible

THE TABULAR VIEW 8
Contributors and contributions to this issue

THE TREND OF AFFAIRS 19
Relating to the Massachusetts Institute of Technology

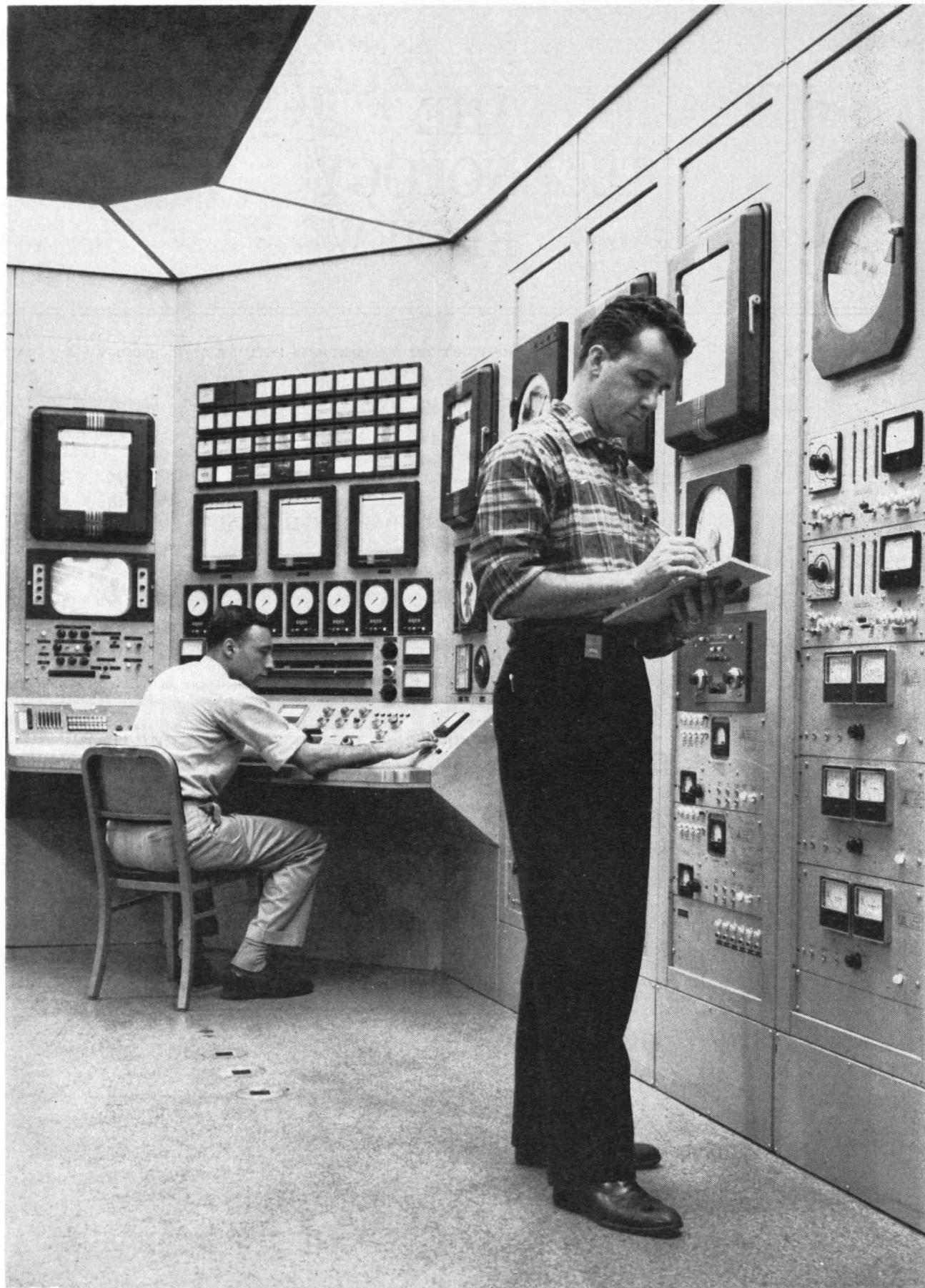


Old Shipyard —
New Ships

Photograph by
Raymond E. Hanson

EDITOR:
B. Dudley
BUSINESS MANAGER:
R. T. Jope
CIRCULATION
MANAGER:
D. P. Severance
EDITORIAL
ASSOCIATES:
Paul Cohen
J. R. Killian, Jr.
F. W. Nordsiek
J. J. Rowlands
EDITORIAL STAFF:
Ruth King
Shirley G. Reese
Winifred R. Sibley
BUSINESS STAFF:
Madeline R. McCormick
Catherine MacLachlan
PUBLISHER:
H. E. Lobdell

Published monthly from November to July inclusive on the twenty-seventh of the month preceding the date of issue, at 60 cents a copy. Annual subscription, \$4.00; Canadian and foreign subscription, \$4.50. Published for the Alumni Association of the M.I.T.; John J. Wilson, President; H. E. Lobdell, Executive Vice-president; D. Reid Weedon, Jr., William W. Garth, Jr., Vice-presidents; Donald P. Severance, Secretary-Treasurer. Published at Hildreth Press, Inc., Bristol, Conn. Editorial Office, Room 1-281, Massachusetts Institute of Technology, Cambridge 39, Mass. Entered as second-class mail matter at the Post Office at Bristol, Conn. Copyrighted, 1958, by the Alumni Association of the Massachusetts Institute of Technology. Three weeks must be allowed to effect change of address, for which both old and new addresses should be given.



M.I.T. Photo

Control Room of the M.I.T. Reactor

The first stationary nuclear reactor to be built in New England — a “tame” unit producing no power — was put into operation during the summer months at M.I.T. The new facility will be used for training nuclear science engineers, and for research in the physical and medical sciences.



The Trend of Affairs

Nuclear Reactor Now Operating

■ During the summer, the Institute's nuclear reactor was put into operation as an important new research facility for the physical and medical sciences in New England. "Tamed" atomic energy was demonstrated to members of the press on August 6, in the first tour of the new facility since it was completed. The general public had its opportunity to inspect the reactor at "Open House" on August 23.

At the press demonstration, operators at the control board showed how the splitting of atoms in the U^{235} fuel could be stepped up until a self-sustaining chain reaction was achieved, and how this reaction could be shut off. At the same time, radioactive iodine-131 was produced by exposing iodine to the reaction.

The tour was conducted by Theos J. Thompson, Director of the M.I.T. Reactor and Professor of Nuclear Engineering, who explained that the new facility will be operated only at low temperature and is not intended for power production. Primarily, the reactor is a facility for research and for the training of nuclear engineers.

The M.I.T. reactor is located on Albany Street in Cambridge, a short distance from the Institute's main group of academic buildings. It is readily accessible to educational, medical, and research institutions in Metropolitan Boston. The new \$3,000,000 research facility includes buildings for offices, classrooms, laboratories, and shops. Much of its cost was underwritten by Technology Alumni as a memorial to the late Karl T. Compton. Medical facilities at the reactor were made possible by a grant of \$250,000 from the Rockefeller Foundation. The National Science Foundation contributed \$500,000 to the total cost, and the Atomic Energy Commission made available five tons of heavy water for its operation.

Except for propulsive reactors installed in atomic submarines built at New London, Conn., the M.I.T. reactor is the first such facility in New England, although many more reactors have been built in other parts of the country. The reactor was designed at M.I.T. under the direction of Dr. Thompson, who has had extensive experience in the field of atomic energy. A unique feature is the medical therapy

room, located beneath the reactor core, where patients may be treated for such ailments as brain tumors.

Although medical treatment and research will be important phases of the reactor program, there will be many other uses. It will serve as a laboratory in the training of engineers and scientists in the newly established Department of Nuclear Engineering at M.I.T. It will be one of the most versatile research facilities at M.I.T. and will be employed in a wide range of research in such fields as physics, biology, metallurgy, mechanical engineering, and food technology. The reactor will be available for research by private industries, other colleges, and government agencies. As Dr. Thompson explained —

"Basic research programs which combine the use of the professional talents and research interests of the M.I.T. staff with the utilization of the reactor experimental facilities will be encouraged whenever possible.

"M.I.T. feels a strong obligation to aid Massachusetts and New England, as well as the entire nation, in developing and exploiting to its fullest extent the potentialities of atomic energy. The peaceful uses of atomic energy are certain to be of great value to the general public and to industry."

The reactor has been described as a "cool" or "tame" type, since it will operate at a temperature of only 104 degrees F. — about that of a warm bath. Unlike power reactors, in which heat is converted into electricity, heat from the M.I.T. reactor will be deliberately dissipated through the cooling system. The principal product of the atomic reaction in the reactor will be radiation, especially particles known as slow neutrons. From the reactor also will come gamma rays — the same kind of radiation as that produced by x-ray machines, but more energetic.

These radiations can be used for many purposes, such as the study of the structure of the nuclei of atoms and the molecular structure of crystals, the testing of metals and other materials, and research regarding the biological effects of radiation.

The reactor will usually operate 24 hours a day but will be shut down on Saturdays and Sundays, Dr. Thompson said. The first shift of the week will be devoted to checking all parts of the reactor.

Individuals Noteworthy

■ Prominent in the news since The Review's last issue have been the 27 promotions, elections, or appointments enumerated below:

Merrill E. Pratt, '16, as Chairman, Continental Gin Company . . . *Joseph L. Gillson*, '21, as President-elect, American Institute of Mining, Metallurgical, and Petroleum Engineers . . . *Latimer F. Hickernell*, '22, as President, American Institute of Electrical Engineers . . . *Bartow Van Ness, Jr.*, '22, as Chief Electrical Engineer, Penn. Power and Light Co.;

Richard L. Bowditch, '23, and *John R. Newell*, '34, as Trustees, Bates College . . . *John T. Blake*, '24, as a Trustee, Tufts University . . . *Bernard E. Groenewold*, '25, as President, Midland Exploration Company, and as Vice-president, Sharp Drilling Company . . . *Walter Crafts*, '26, as Vice-president, American Society for Metals;

James W. Dunham, '26, as President, Midwest Carbide Corporation . . . *George J. Taylor*, '26, as President, Illuminating Engineering Society . . . *Charles C. Smith*, '27, as President, Auer Register Company, Cleveland, Ohio . . . *Robert C. Gunness*, '34, as Trustee, University of Chicago;

Brigadier General Joseph M. Colby, '35, as Deputy Commander, Army Ordnance Missile Command . . . *Major General William M. Creasy, Jr.*, '36, as Vice-president, The Lummus Company . . . *P. William Bakarian*, '37, as President and General Manager, and *John S. Breitenstein*, '40, as Vice-president in charge of administration, R-N Corporation, subsidiary of National Lead Company;

Kenneth E. Fields, '38, as Executive Vice-president, International Standard Electric Corporation, overseas subsidiary of International Telephone and Telegraph Corporation . . . *Robert L. Johnson*, '38, as Vice-president and Treasurer, Boston Manufacturers Mutual and Mutual Boiler and Machinery Insurance Companies . . . *Gerald J. McCaul*, '40, as Executive Vice-president, Simmonds Aerocessories, Inc., Tarrytown, N.Y. . . . *Julius P. Molnar*, '40, as Vice-president, Western Electric Company, and as President, Sandia Corporation . . . *Kenneth M. Leghorn*, '42, as President, Bradley Container Corporation, subsidiary of American Can Company;

Virgilio Barco-Bargas, '43, as *Ministro de Obras Públicas*, Republic of Colombia . . . *Harold D. Pearson*, '43, as Vice-president, Electronics Corporation of America . . . *Albert P. Hildebrandt*, '44, as President, Lumber Fabricators, Inc., Fort Payne, Ala. . . . *Robert H. Symonette*, '45, as Deputy Speaker, House of Assembly of the Bahamas . . . *Albert E. Cookson*, '51, as Director, Missile Guidance Laboratory, I.T.T. Laboratories Division, International Telephone and Telegraph Corporation.

■ During the summer, special honors announced or awarded came to 22 Alumni and to a member of the Faculty as follows:

To *Charles M. Spofford*, '93, the Frank P. Brown Medal, to *Donald W. Douglas*, '14, the Franklin Medal, and to *Julian M. Avery*, '18, the Francis J. Clamer Medal, by the Franklin Institute;

To *Edith A. Beckler*, '02, the Lemuel Shattuck Award, by the Massachusetts Public Health Associa-

tion . . . to *Herbert T. Kalmus*, '04, honorary membership, by the Society of Motion Picture and Television Engineers . . . to *Herbert J. Ball*, '06, honorary membership, by the American Society for Testing Materials;

To *Emory L. Chaffee*, '07, its Medal of Honor, by the Institute of Radio Engineers . . . to *Irving W. Wilson*, '11, an honorary doctorate of commercial science, by Duquesne University, and an honorary doctorate of laws, by Washington and Jefferson College . . . to *Jerome C. Hunsaker*, '12, its Distinguished Public Service Award, by the Department of the Navy;

To *Lucius A. Bigelow*, '15, the Herty Medal, by the Chemistry Club, Georgia State College for Women . . . to *Francis P. Scully*, '15, the Aladdin Lamp, by the Oil-Heat Institute of America . . . to *Frederick H. Norton*, '18, honorary membership, by the British Ceramics Society;

To *Charles A. Chayne*, '19, an honorary doctorate of engineering, by the University of Michigan . . . to *Léon G. Rucquoi*, '24, the grade of *Officier de l'Ordre de Léopold*, on nomination by the King of the Belgians . . . to *James R. Killian, Jr.*, '26, the Gold Medal World Brotherhood Award, by the National Conference of Christians and Jews.

To *George J. Taylor*, '26, the grade of Fellow, by the American Institute of Electrical Engineers . . . to *Edward D. Stone*, '27, architect of the United States Pavilion at the Brussels Exposition, the grade of Fellow and an Award of Merit, by the American Institute of Architects . . . to *Hunter Rouse*, '29, the Vincent Bendix Award, by the American Society for Engineering Education;

To *Erskine G. Roberts*, '32, a citation for meritorious service to the people of Indiana, by the Governor of Indiana . . . to *Peter P. Alexander*, '33, an honorary doctorate of science, by Northeastern University . . . to *Gordon Bunshaft*, '33, the grade of Fellow, by the American Institute of Architects;

To *Major General William M. Creasy, Jr.*, '36, the Distinguished Service Medal, by the Department of the Army . . . to *Carl F. J. Overhage*, Director of the Institute's Lincoln Laboratory in Lexington, its Exceptional Service Award, by the United States Air Force.

Aid to Air Defense

■ Formation of the Mitre Corporation, a new organization that will provide the United States Air Force with scientific and engineering services on problems in air defense, was announced on August 26, 1958, by J. A. Stratton, '23, Acting President of M.I.T.

The Mitre Corporation, a nonprofit organization sponsored by M.I.T., will provide the technical and systems support required for the integration of the nation's air defense systems. In this role, the new corporation will work with and assist the recently formed Air Defense Systems Integration Division of the U.S. Air Force, a tri-command unit which was formed early last spring at L. G. Hanscom Field in Bedford, Mass. Known as "ADSID," this new unit represents the Air Research and Development Command, the Air Materiel Command, and the Air De-

fense Command. Major General Kenneth P. Bergquist is commander of ADSID.

The Mitre Corporation will be staffed with scientific and engineering personnel on a gradual build-up basis at a rate determined primarily by requirements of the Department of Defense. It is expected that the initial nucleus of Mitre personnel will include some of the persons currently working at M.I.T.'s Lincoln Laboratory in Lexington, Mass. Officials at the Lincoln Laboratory indicated that most of the personnel moving to Mitre will come from among those who have been engaged in development of the SAGE (Semi-Automatic Ground Environment) air defense system.

Until the Mitre Corporation is able to assume its full responsibilities, the Lincoln Laboratory will continue to provide the scientific and engineering services required for systems support of air defense as "principal systems adviser" to the ADSID. When these tasks have been transferred to the new organization, Lincoln Laboratory will be able to concentrate its efforts on its basic mission of research in air defense electronics and related fields, and the early development of advanced systems emerging from such research.

The Mitre Corporation was officially incorporated on July 18. Currently, a Board of Trustees made up of representatives of industrial, educational, and scientific organizations is being formed.

Heading the Board of Trustees is H. Rowan Gaither, Jr., chairman of the Board of the Ford Foundation. C. W. Halligan, Director of Military Engineering at the Bell Telephone Laboratories, Inc., will be president of the Corporation. He will have his offices at the Air Defense Systems Integration Division buildings at Hanscom Field.

Formation of the Mitre Corporation evolved from several years of study at highest levels in Washington. Following the reports of several special military-civilian committees studying current and future needs for managing the complex air defense effort, James H. Douglas, Secretary of the Air Force, invited the Institute to assist in this joint military-industry effort for air defense systems.

School Begins

■ Representing almost every state in the Union, and 26 foreign countries, 900 freshmen arrived at the Institute on September 18 for the annual freshman orientation week end that precedes the beginning of classes.

The Class of 1962, which includes 84 National Merit Scholars from 36 states, met for the first time on Thursday afternoon, September 18, in Kresge Auditorium. Their week-end schedule included a beach picnic, individual conferences with Faculty advisers, a tea for women students given at the home of Frederick G. Fassett, Jr., Dean of Residence, and a dance on Saturday night. Activities were concluded with a reception on Sunday afternoon for freshmen and their parents, given by J. A. Stratton, '23, Acting President, and Mrs. Stratton.

An additional 5,300 upperclassmen and graduate students registered on September 22, bringing the total enrollment for the fall term to 6,200 — a slight

On the Horizon

November 8, 1958 — 13th M.I.T. Alumni Regional Conference, Albuquerque, N.M.

November 17, 1958 — Silver Stein Dinner, M.I.T. Club of New York, Hotel Biltmore, 43d Street and Madison Avenue, New York, N.Y.

January 31, 1959 — 14th M.I.T. Alumni Regional Conference, Detroit, Mich.

increase over last year's student body, despite higher tuition.

"We can help students meet the higher costs of education," said Thomas P. Pitre, Associate Dean, and Director of Student Aid at M.I.T., "because there are more industrial funds for scholarships than ever before. There are also part-time jobs for students at the Institute, and an increased loan fund which is available to freshmen for the first time this year."

A new resident tutorial plan, growing out of the Faculty resident system begun seven years ago, will go into effect in one M.I.T. dormitory this year. Professor Howard R. Bartlett, Head of the Humanities Department, will be the first master of Burton House. Assisted by two senior tutors and several other tutors, Professor Bartlett will have the responsibility for guiding and counseling undergraduates who live in Burton House.

Another "first" for M.I.T. students this term will be courses offered in the recently established Department of Nuclear Engineering. Using as its laboratory the new M.I.T. nuclear reactor, the Department is New England's first.

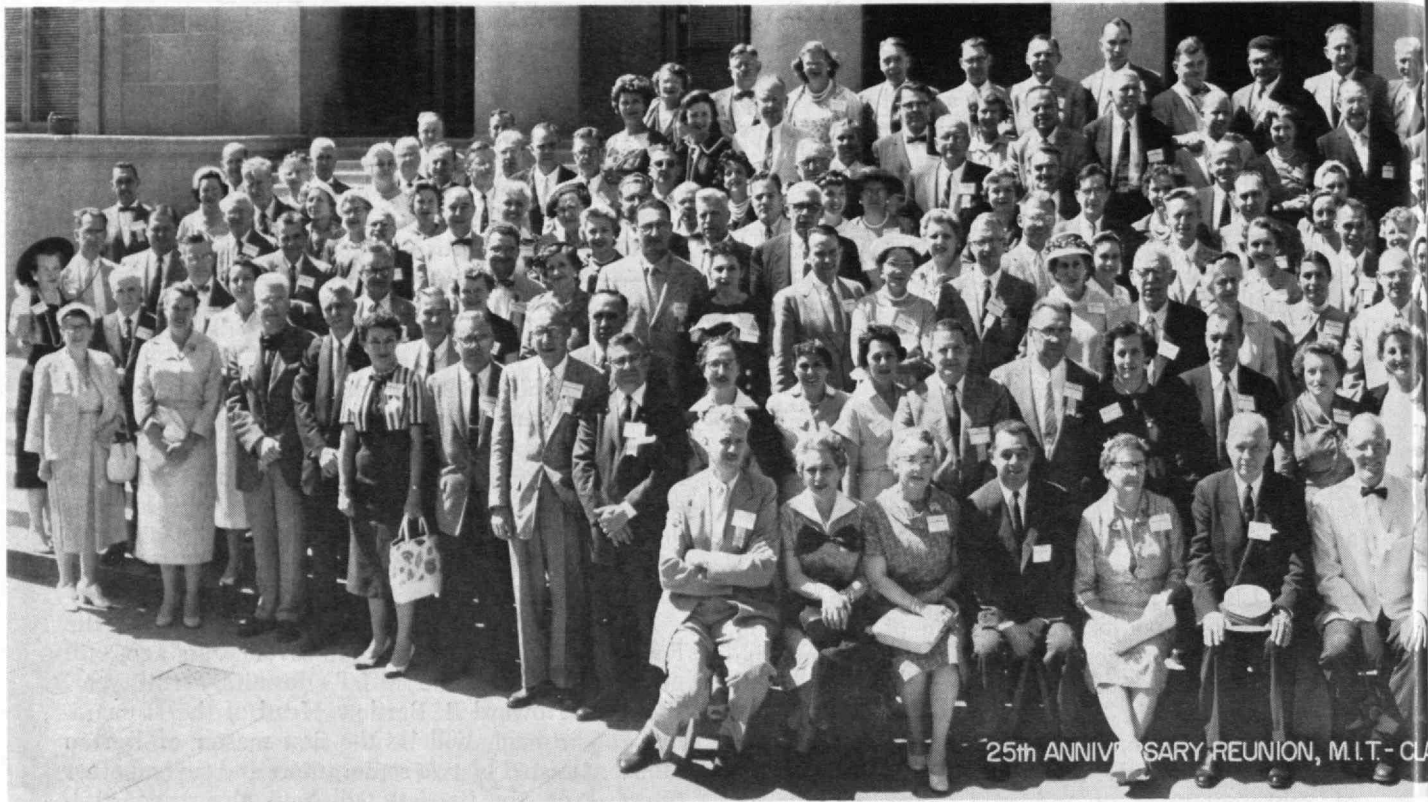
George W. Swett: 1881-1958

■ The Review records with regret the death of George W. Swett, '03, Professor of Machine Design, Emeritus, on September 30 in Brookfield, N.H. He was professor of machine design from 1929 until 1946, and was also secretary of the Faculty for many years.

Born in Troy, N.Y., Professor Swett was graduated from M.I.T. in 1903. That year he joined the Institute staff as an assistant in the Department of Mechanical Engineering and remained an active member of the Faculty until his retirement in 1951. From 1946 (when he was made professor emeritus) until 1951, he served part time as lecturer at the Institute. He was a member of the staff of the Lowell Institute School and was the first head of the Mechanical Engineering Department of Northeastern University.

Professor Swett was the author of the *Construction of Alignment Charts*, and co-author with the late Professor George B. Haven, '94, of texts including the *Design of Boilers and Pressure Vessels*, and *A Treatise on Leather Belting*. He was a member of the American Society for Testing Materials, the Society for the Promotion of Engineering Education and the American Association for the Advancement of Science.

Professor Swett is survived by his wife and two daughters — Mrs. Howard Sinclair Turner and Mrs. Wallace R. Creelman.



Metropolitan Photo

Happily celebrating their 25th reunion June 14 to 16, members of the Class of 1933 and their wives gathered on the steps of Walker Memorial (as shown above and on the opposite page), just after the Faculty Luncheon in Walker. With reunion head-

Faculty Appointments and Promotions

■ New appointments and promotions on the Institute's Faculty, announced during August, numbered three named to full professorships, two associate professorships, and 23 men who become assistant professors. The three full professors are: Captain Edward S. Arentzen, '43, U.S.N., Professor of Naval Architecture and Marine Engineering; Evsey D. Domar, Professor of Economics; and Kenkichi Iwasawa, Professor of Mathematics.

Captain Arentzen, a graduate of the U.S. Naval Academy, received his master's degree in Naval Architecture from M.I.T. Before joining the Institute's Faculty, he was head of the Preliminary Design Branch, Bureau of Ships in Washington, D.C.

Dr. Domar was at M.I.T. during the spring term of 1957 as a visiting professor from the Johns Hopkins University, where he has been professor of political economy. He was formerly director of Russian studies for the Operations Research Office of the Johns Hopkins University, and has lectured at the Russian Institute of Columbia University.

Dr. Iwasawa, formerly Associate Professor of Mathematics, received both his undergraduate and doctorate degrees in mathematics from Tokyo University, where he taught until 1950. He came to the United States as a member of Princeton University's Institute for Advanced Study and joined the M.I.T. staff in 1952.

To serve as associate professors are: Albert Bush-Brown, Associate Professor of Architectural History in the Department of Architecture; and Daniel M.

Holland, Associate Professor of Finance in the School of Industrial Management.

Professor Bush-Brown received the bachelor and master of fine arts degrees from Princeton University. In addition to his courses on the history and theory of architecture in the Department of Architecture, he will take part in the visual arts program begun last year in the Humanities Department. Dr. Holland was at M.I.T. as a visiting lecturer during the spring term of 1957, and during the past year has been associate professor of economics at New York University. Professor Holland received his undergraduate and doctorate degrees in economics from Columbia University. He is a specialist in the field of public finance and fiscal policy, and has been a member of the research staff of the National Bureau of Economic Research since 1952.

Joining the ranks of the Institute's assistant professors in various departments are: *Chemical Engineering* — Charles M. Mohr, '55; *Chemical Engineering Practice* — David H. Klipstein, '56; *Chemistry* — Walter Thorson; *Economics and Social Science* — David M. Green, '57, Thomas M. Lodahl, and George O. Totten, 3d; *Electrical Engineering* — Dudley A. Buck, '52, Ronald A. Howard, '55, William D. Jackson, Richard C. Jeffrey, Paul R. Johannessen, '52, Arthur L. Loeb, John McCarthy, Charles W. Merriam, 3d, '55, Albert H. Nuttall, '54, and David R. Whitehouse, '54; *Industrial Management* — Victor L. Andrews and Martin Greenberger; *Mathematics* — George Backus and Franklin P. Peterson; *Mechanical Engineering* — Philip G. Hill and Yasutoshi Senoo; *Physics* — Kenneth A. Johnson.



quarters at Baker House, M.I.T., most of the events were held on campus, and culminated with Alumni Day activities on Monday, June 16. Charles C. Bell and Robert M. Kimball were chairman and vice-chairman, respectively, of the reunion.

Visiting Professors on Campus

■ Impressive is the list of eight visiting professors who will be on the M.I.T. Campus for the academic year 1958-1959. In August, J. A. Stratton, '23, Acting President of the Institute, announced the appointment of these men who, with broad backgrounds in industrial experience or from universities in this country and overseas, will widen horizons at M.I.T.

Starting the roster with the three appointees in what is still one of the larger departments at the Institute (Electrical Engineering, Course VI), their respective posts are described in the following paragraphs.

Paul F. Chenea, Acting Head of the School of Electrical Engineering, Associate Dean of Engineering, and Head of the Division of Engineering Science at Purdue University, will be Visiting Webster Professor of Electrical Engineering at the Institute for the year 1958-1959. While occupying the Webster chair, Professor Chenea will participate in the Electrical Engineering Department's teaching and research program in electrodynamics and materials.

The Webster chair was established at M.I.T. in 1952 under a grant of \$400,000 from the Edwin Sibley Webster Foundation in memory of the late Mr. Webster, one of the Institute's most distinguished Alumni. Edwin S. Webster, for whom the chair is named, was graduated from M.I.T. in 1888 and founded with his classmate, the late Charles Stone, the national organization of Stone and Webster, Inc., the first electrical engineering consulting firm in this country.

Dr. Chenea, who did his undergraduate work at the University of California, received the Ph.D. degree from the University of Michigan. He taught there until 1952, when he was appointed a professor at Purdue University. Specializing in the fields of servomechanisms, theory of elasticity, vibration analysis and advanced dynamics, Professor Chenea has co-authored two books: *Mechanics of Vibration*, with H. M. Hanson; and *Engineering Mechanics*, with T. A. Hunter.

Nathaniel Rochester, '41, manager of the Department of Information Research, International Business Machines Corporation, has been appointed visiting professor of communication sciences in the Department of Electrical Engineering. Professor Rochester will lecture in the field of data processing, and will work closely with the staff of the Institute's recently established Center for Communication Sciences.

The objective of the new M.I.T. Center is to arrive at a better understanding of communication and a more effective use of machines through the collaborative work of mathematicians, electrical engineers, linguists, psychologists, physiologists, and others. They will study communication functions of both the human nervous system and such machines as computers, as well as methods of communicating between the two.

Professor Rochester was graduated from M.I.T. in 1941 with an S.B. degree in Electrical Engineering, and worked for two years with M.I.T.'s Radiation Laboratory during World War II. Joining the I.B.M. staff in 1948, he worked on the development of a tape-processing machine. He was instrumental in the



Shown above are classmates and guests of the Class of 1908 as they celebrated their 50th reunion on the week end of June 13-15 at Snow Inn, Harwich Port. Members of the Class in the front row (left to right) are: Miles Sampson, H. Leston Carter, Edward J. Riley, George Schobinger, Howard B. Luther, Samuel F. Hatch, Harold H. Howland, Karl R. Kennison, George E. Freethy, Richard C. Collins, James M. Burch, Jr. Middle Row: Leslie B. Ellis, Harold E. Weeks, Harold S. Osborne, Henry H. Damon, Frank W. Sharman, Franklin T. Towle. Back Row: Harry A. Rapelye, Paul W. Norton, Edgar I. Williams, Myron M. Davis, George M. Belcher, Henry W. Blackburn, William C. Taylor, Charles M. Steese, Carl A. Hall, Frederick A. Cole, William H. Medlicott, Harold W. Griswold, Joseph Pope, Clarence H. Spiehler, Charles F. Joy, Jr., Wilfred E. Booth, Harry S. Chandler, Henry R. Sewell, Charles A. Edmonds. Attending the reunion but not present when the picture was taken were Monroe Ames, Raymond E. Drake, Joseph W. Wattles, 3d, and their wives, and John R. Reyburn.

development of several of I.B.M.'s large-scale computers, and in 1955 organized the I.B.M. Department of Information Research.

Concluding visiting personnel in the Department of Electrical Engineering is Laurel J. Lewis, Visiting Professor of Electrical Engineering. Dr. Lewis is professor of Electrical Engineering at the University of Washington. He received both his undergraduate and doctorate degrees from Stanford University where he taught for several years after graduation.

In the Institute's Department of Biology, Salvador E. Luria will be visiting professor of biology, and Vernon M. Ingram has been appointed visiting associate professor of biochemistry. Dr. Luria comes to M.I.T. from the University of Illinois, where he has been professor of bacteriology for eight years. A native of Turin, Italy, Professor Luria received the M.D. degree at the University of Turin. Since coming to this country in 1940, he has done research in bacteriology at Columbia University, and as a Guggenheim Fellow at Vanderbilt and Princeton Universities. In 1950 he was Jessup Lecturer at Columbia University. Dr. Ingram, born in Germany, first came to this country following his graduation from the University of London where he received the Ph.D. degree. He spent a year at the Rockefeller Institute in New York and at Yale University before returning to England, where he has been a staff member of the Medical Research Council at Cavendish Laboratory in Cambridge. Dr. Ingram is the first scientist to discover exactly how a vital component of the human blood cell is damaged by an inherited disease. He has been able to put biologists on the right track concerning an inborn error of heredity, through his studies of sickle cell anemia at the Cavendish Laboratory in Cambridge, England.

The Department of Economics and Social Science will welcome Erik H. Erikson, Visiting Professor of Communications, and Henry R. Strotz, Visiting Professor of Economics. Professor Erikson, born in Germany, came to the United States in 1933 following

his graduation from the Vienna Psychoanalytic Institute. Since 1951 he has been professor of psychology at the University of Pittsburgh School of Medicine, and he is a senior staff member at the Austen Riggs Center in Stockbridge, Mass. Professor Erikson has pioneered in the application of psychoanalysis to children for the prevention of mental illness. He is the author of numerous articles on that subject, as well as the book *Childhood and Society*. Dr. Strotz received both his undergraduate and doctorate degrees from the University of Chicago. He is professor of economics at Northwestern University, and is also managing editor of *Econometrica*, which is published by the Econometric Society.

Concluding the above list is John C. Fisher, '47, Visiting Professor of Engineering. Dr. Fisher, a research associate with the General Electric Company, has been a visiting lecturer in the M.I.T. Metallurgy Department for the past seven years. He is a graduate of Ohio State University and received his doctorate from the Institute.

John A. Rockwell: 1872-1958

■ Dr. John A. Rockwell, '96, for whom the Rockwell Athletic Cage at the Institute is named, died in Cambridge on July 23. Dr. Rockwell was 86 years old. During his life he devoted 50 years of service to athletics at M.I.T., and in 1955 was the recipient of a citation from the Massachusetts Memorial Hospitals, also for 50 years of service.

Born in 1872 in Atlanta, Ga., Dr. Rockwell attended Norwich Academy and received an S.B. degree from M.I.T. in 1896. He then entered Boston University School of Medicine and was graduated in 1899. He started practicing medicine in Cambridge in 1902, and was on the staff of the Massachusetts Memorial Hospitals, which was then known as the Massachusetts Homeopathic Hospital. He was also associated with the Mount Auburn and Hahnemann hospitals. Dr. Rockwell was one of the early re-

searchers in x-ray work and suffered from its results in his life.

An excellent track and football man, Dr. Rockwell held a keen interest in intercollegiate and amateur athletics. His particular interest was wrestling, and he was instrumental in establishing wrestling as an intercollegiate sport in the East.

Interested in M.I.T. athletics from his student days, he (with Thomas Hibbard, '75, and Frank H. Briggs, '81) represented the Alumni Association in the organization of the Advisory Council on Athletics on January 18, 1898, and served continuously on this Council, interrupted only by service in World War I, until the Council ceased its guidance of M.I.T. athletics in 1947. Commemorating his service as a charter member of the Council and as its chairman from 1910 until 1947, the Institute dedicated the Rockwell Athletic Cage in his honor on Alumni Day, June 12, 1948. Also in his honor was the christening in 1942 of a crew shell, the *John A. Rockwell*, '96.

Throughout his life, Dr. Rockwell served M.I.T. by contributing generously of his time and wise counsel — to the Class of 1896 (as its assistant secretary and secretary for many years), to the Alumni Association (as a member of the Alumni Council from 1919–1958), and to generations of M.I.T. men.

He was a member of the Oakley Country Club, Boston Art Club, Army-Navy Club of Washington, Accomac Club (Virginia), and Theta Xi fraternity.

He is survived by his wife, the former Isabelle Barnes, and a sister, Mrs. Edward S. Cole of Upper Montclair, N.J.

Administrative Appointments

■ Appointment of Walter L. Milne as administrative assistant to the President of the Institute was announced in August by J. A. Stratton, '23, Acting President. George D. Wood, Jr., has been appointed to succeed Mr. Milne as assistant to the Director of Public Relations.

Mr. Milne came to the Institute in 1951 after serving as an instructor in English at Brown University and Worcester Polytechnic Institute. A native of Fall River, he received A.B. and A.M. degrees at Brown, in 1943 and 1947, respectively, and was a lieutenant (j.g.) in the Navy during World War II.

Mr. Wood, who was born in Shelburne Falls, Mass., received a B.A. degree from American International College and an M.S. from the Boston University School of Public Relations. At the American International College, he was head coach of football and director of the News Bureau, and at Boston University he was the assistant to the Director of Publicity for three years. In 1951 he became a civilian public relations official for the United States Air Force, handling public information for the Northeastern Air Procurement District, and in 1953 was appointed civilian public relations and public information chief for the Air Force Cambridge Research Center. More recently he has been with Val Laughner Associates.

During World War II, Mr. Wood served as a first sergeant in the Combat Engineers in the European Theater of Operations for 15 months. For nine years he was a member of the Army Counter Intelligence Reserve Corps.

Athletic Résumé, 1957-1958

■ The year 1957–1958 made the M.I.T. community proud of its athletic teams. In the fall of 1957, the sound of the M.I.T. soccer team was heard all over the world. Twelve different countries were represented on the internationally flavored Tech squad, and the season was completed with a record of seven wins, one loss, and one tie. An unprecedented accomplishment for the soccer team was that it ranked second to Springfield College in the New England Soccer League, and two men were selected for the Second All Star Team, with one being selected for honorable mention. In the fall, as well as in the spring, the sailing team was a consistent winner, recording wins over practically every major school in the East.

Seventeen M.I.T. winter sports teams competed in 174 intercollegiate events during the winter months. From the New England Intercollegiate Fencing Championships, the Tech fencers came home with two trophies for first place in the individual foil and *épée* categories, and as a school placed second in New England. Many Tech records were broken during the New England Intercollegiate Swimming Championships. Squash, pistol, and rifle teams also recorded good seasons. M.I.T.'s record was low in basketball and hockey in the usual sense, but high in the satisfaction that the competition brought to the players.

The Institute's spring season was highlighted by two events. First, Tech had its first baseball victory in history over Harvard. This feat was particularly significant inasmuch as Harvard won the Ivy League Championship and was a "push-over" for none but M.I.T. The Tech lacrosse team capped the most successful season in its history by winning the Taylor Cup — symbolic of the National Class C Championship, achieving an 8-2 record for the season. The high point of the season was the rallying 6-5 victory over Harvard — M.I.T.'s first Crimson conquest since 1942.

The Review is pleased to present, in the following paragraphs, reports on four athletic teams as prepared by: Coach Robert M. Whitelaw on varsity baseball and freshman basketball; Coach John H. Burke, Jr. on varsity basketball and golf.

Baseball

The varsity baseball team opened its ambitious 16-game schedule by losing to Boston College. The second game of the season made M.I.T. baseball history as sophomore Richard H. Oeler, '60, starting his first varsity game, beat Harvard 2-0 while limiting the Crimson to two hits behind the excellent defensive support of the Tech team. The victory was the first baseball win in history over Harvard.

Highlighting the offensive power of the scheduled games was the slugging of Captain-Elect Warren H. Goodnow, '59, which included four doubles, one triple, and three fence-clearing home runs. Warren was elected to the Greater Boston Baseball League All-Star Team at the completion of the season's play.

Plagued with the usual crippling team injuries and scholastic pressures, the team members maintained

(Continued on page 40)

Charles B. Breed: 1875-1958

■ Charles B. Breed, '97, Professor of Civil Engineering, Emeritus, died in Camden, Maine, on August 9 at the age of 82 years. Professor Breed, Head of the Department of Civil and Sanitary Engineering from 1934 to 1944, was widely known as a consulting engineer and author of engineering textbooks. He was an authority on the elimination of grade crossings, and served as consultant to several state public utility commissions on problems pertaining to valuations, bridges, traffic control, pavement design and performance.

Born in Lynn on November 28, 1875, Professor Breed was graduated from M.I.T. in 1897. The following year he returned to the Institute as an assistant in Civil Engineering, and remained an active member of the Faculty until his retirement in 1946. He became an assistant professor in 1907, associate professor in 1910, and professor in 1914. From 1940 to 1942 he served as chairman of the Faculty.

Second Alumni Fund Conference

■ Approximately 160 Alumni—including Class Agents, Special Gifts Chairmen, Regional Representatives, representatives of various classes—and about a score of members from the Institute's Faculty and staff attended the Second Alumni Fund Conference on Friday and Saturday, September 12 and 13, at M.I.T. where they heard administrative officers discuss M.I.T. plans and policies. Out-of-town registrants were housed at Baker House.

John J. Wilson, '29, President of the Alumni Association, presided at the opening session which was held at the Little Theater in Kresge Auditorium on Friday morning, September 12. Edwin D. Ryer, '20, chairman of the Alumni Fund Board, was moderator for a panel of speakers at this session. Philip A. Stoddard, '40, Vice-Treasurer of the Institute, spoke on

Professor Breed was co-author, with Professor George L. Hosmer, '97, of a two-volume book on *Principles and Practice of Surveying*. He also wrote a short text on surveying, a surveying instruction manual for the Armed Forces Institute in World War II, several reports on highway costs, and many technical articles. For many years he was a member of the American Society of Civil Engineers, of which he was also a past director. In 1940 he was made an honorary member of the American Society of Civil Engineers, the highest individual honor that the Society bestows. He was a past president of the Boston Society of Civil Engineers and of the New England Railroad Club, national honorary member of Chi Epsilon, honorary member of Tau Beta Pi, and a member of the American Railway Engineering Association, American Road Builders Association, and American Society for Engineering Education. Professor Breed was also a trustee of the Lynn Five Cents Savings Bank.

the continuing financial needs of M.I.T. Robert M. Kimball, '33, Secretary of the Institute, outlined ways in which Alumni might help to cultivate interest in M.I.T. activities of persons concerned with higher education. Henry B. Kane, '24, Director of the Alumni Fund, reviewed the history of the Alumni Fund and outlined its objectives for the coming years. George P. Wadsworth, '30, Associate Professor of Mathematics, and Alumni Fund consultant, outlined analytical techniques used to study Alumni Fund giving; and the talk by Joseph E. Conrad, Director for Regions and Special Gifts, dealt with the merits of personal solicitation. Finally, Donald P. Severance, '38, Secretary of the Alumni Association, spoke on the relation of Fund activities to other Alumni activities, such as the regional conferences which have been signally successful wherever they have been held in various cities in the United States.



M.I.T. Photos

Enjoying good fellowship at luncheon in the Graduate House on September 12, head table guests were (left to right above): Donald P. Severance, '38, Secretary-Treasurer of the Alumni Association; John J. Wilson, '29, President of the Association for the current year; George J. Cooke, Jr., Director of the Princeton Alumni Fund and President-Elect of the American Alumni Council; Edwin D. Ryer, '20, Chairman of the Alumni Fund Board; W. Channing Brown, '91, Class Secretary; Miles S. Sherrill, '99; and Henry B. Kane, '24, Director of the Alumni Fund. A Technology beaver, molded in ice (right) stands guard over delicacies offered for the Friday evening dinner at Walker Memorial.





M.I.T. Photo

Head table guests at Walker Memorial included (left to right): Whitworth Ferguson, '22; Avery H. Stanton, '25; Edwin D. Ryer, '20; George J. Cooke, Jr., of Princeton University; James R. Killian, Jr., '26; J. A. Stratton, '23 (at speaker's rostrum); H. B. Richmond, '14; H. E. Lobdell, '17; Raymond Stevens, '17; and Joseph E. Conrad, Director of Regional Fund.

On Friday, luncheon was served at the Campus Room of the Graduate House, with Mr. Ryer presiding. George J. Cooke, Jr., Director of the Princeton Alumni Fund, and President-Elect of the American Alumni Council, was a most welcome guest and inspirational speaker. After reviewing the history of universities and the means by which they had been supported, Mr. Cooke pointed out that American citizens no longer have a free choice in their support of education. If such support is not forthcoming voluntarily, said Mr. Cooke, it will have to be undertaken by the government, and the citizens will have to pay for education one way or another, for education cannot be neglected.

In the afternoon on Friday, meetings of Class Agents were held for the purpose of preparing the first 1959 Fund mailing and for discussing programs of regional solicitation.

Following a social hour at Walker Memorial, where a buffet dinner was served, those attending the conference were fortunate enough to hear James R. Killian, Jr., '26, President of M.I.T., speak on the significant role Technology Alumni played in the recent Atoms for Peace Conference which he had just attended in Geneva.

Mr. Wilson then presented awards to various Alumni who had made significant contributions to the work of the Alumni Fund during the past year. Awards went to:

1. Harold S. Osborne, '08, for leadership in the gift of the Fifty-Year Class;
2. Richard S. Morse, '33, who led his Class to one of the largest 25-Year Class gifts to date;
3. George R. Wadleigh, '97, whose Class achieved 63 per cent participation, the highest of all classes;
4. Edward B. Roberts, '57, whose class achieved the highest participation of any first-year Alumni;
5. Josiah D. Crosby, '21, for his outstanding record of participation in a large region; and
6. Thomas Howitt, Jr., '50, for 100 per cent participation in the Corning Region.

J. A. Stratton, '23, Acting President of the Institute, brought the dinner meeting to a close with an address on challenges facing colleges and universities in meeting the national educational needs. The thoughts expressed by Dr. Stratton were similar to those contained in the President's Report, which is presented in condensed form on page 29 of this issue.

On Saturday morning, September 13, informal meetings were held (1) for Class Agents, at which Mr. Kane presided; and (2) for Special Gifts Chairmen, at which Mr. Conrad presided. Two research developments of current importance were reviewed in the Compton Lecture Hall where D. Reid Weedon, Jr., '41, officiated. Volta W. Torrey, who is M.I.T. Director of Television, J. Halcombe Laning, Jr., '40, Elmer J. Frey, '49, and Milton B. Trageser, '51, presented the results of a study on the feasibility of sending a missile to Mars for photographing this planet. George Bekefi of the staff of the M.I.T. Research Laboratory of Electronics, spoke on gaseous plasmas, indicated the importance of plasma studies in controlling thermonuclear reactions, and conducted visits to the Research Laboratory of Electronics where plasma experiments were demonstrated.

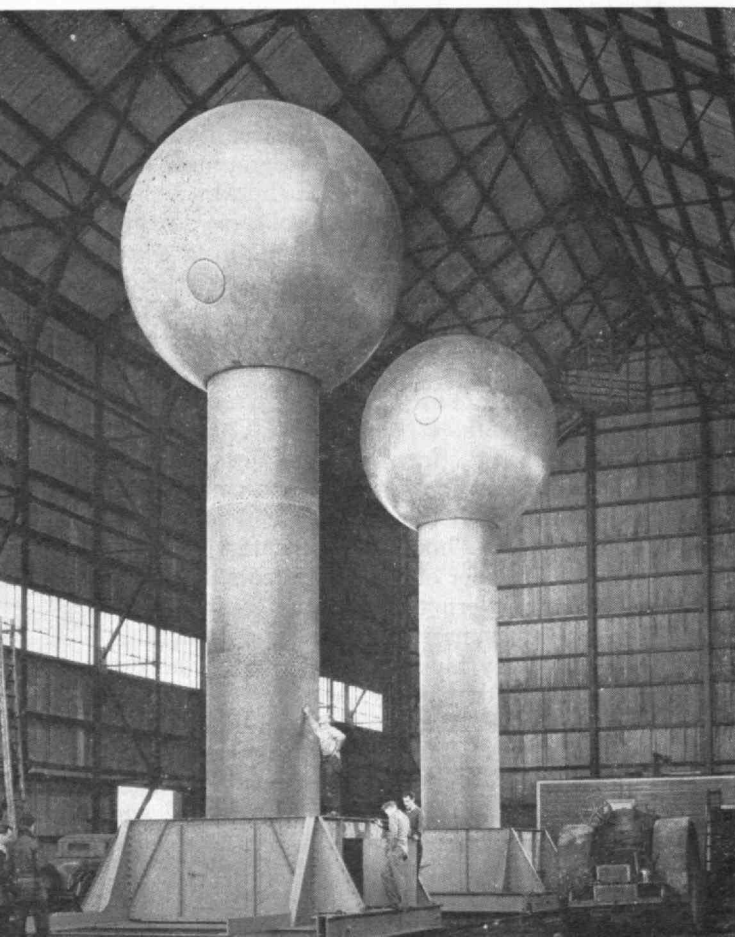
The concluding event of the meeting was luncheon on Saturday, the 13th, at the Faculty Club where Frederick G. Fassett, Jr., Dean of Residence at M.I.T., spoke on the housing problems confronting the Institute. Although the Institute can no longer undertake to provide housing for its married students, a greater number of M.I.T. students than ever before now live in dormitories on the campus or in nearby fraternity houses. Despite a considerable growth in dormitory facilities for students, the demand still exceeds the supply, however. A primary aim of the Institute's Faculty Resident Program — whereby a number of Faculty members live in dormitories occupied by students — is to develop a higher degree of student-Faculty contact for M.I.T. students during their college years.

Twenty-five Years Ago This Month . . .

■ What The Review described as a "mighty siege gun of science" went into action at the M.I.T. Research Station, South Dartmouth, Mass., its purpose being "to batter away at the nucleus of the atom, mysterious and formidable stronghold that has defied man in his march toward an understanding of the material universe. This great instrument of aggression against ignorance is an electrostatic generator producing 10,000,000 volts, a potential far higher than any hitherto accomplished. Conceived by Robert J. Van de Graaff, research associate in the Institute's Department of Physics, and built by many hands, it is ready, with its capacity of 20 or more kilowatts of steady direct current, to hurl missiles of high-voltage ions into the inner atom. . . .

"The Van de Graaff generator has been designed for the purpose of speeding up electrified particles in order to discover the effects which will be produced when they bombard chemical elements of different types. The first proof that this method may be used was found by Drs. J. D. Cockcroft and E. T. S. Walton at Cambridge University, and has since been verified and extended by them and several other workers. The Van de Graaff apparatus will permit such experiments to be extended to much higher voltages than any hitherto employed and to far greater numbers of electrified particles. In this way it may be expected that additional types of atomic disintegration may be discovered and that some of them may be produced on a large scale.

Pictured below is the electrostatic Van de Graaff generator as it was in 1933 at Round Hill in South Dartmouth, Mass.



"In order to carry out these experiments two instruments are necessary: one is a high-voltage generator, . . . the other is a vacuum tube capable of withstanding hitherto unattainable high voltages. . . .

"Until recently nearly all vacuum tubes have been constructed of glass, which has been used up to voltages of about one million. At this voltage, or even less, glass usually breaks. Laminated paper, a great number of layers of thin paper carefully cemented together with shellac under high pressure, is the material being used in construction of the giant vacuum tube designed for the Van de Graaff generator."

■ *Jerome C. Hunsaker*, '12, previously Vice-president of the Goodyear-Zeppelin Corporation, became head of the Department of Mechanical Engineering, succeeding the late *Professor Edward F. Miller*, '86; . . . *President Karl T. Compton* became chairman of the new Science Advisory Board appointed by President Roosevelt to advise the government on its technical and scientific work; with *Frank B. Jewett*, '03, President of the Bell Telephone Laboratories, as a member of the Board; . . . and *President Compton* also was appointed to the Executive Committee of the Business Advisory and Planning Council of the Department of Commerce, of which Council *Gerard Swope*, '95, President of the General Electric Company, was chairman.

Gold Medal to Dr. Collins

■ For outstanding contributions to low-temperature research and especially to the production of liquid helium, Samuel C. Collins, Director of the Cryogenic Laboratory and Professor of Mechanical Engineering at the Institute, received the Kamerlingh Onnes Gold Medal of the Dutch Society for Refrigeration in Holland on June 24.

The Society has awarded only two Silver Medals in the last 50 years. This is the first Gold Medal, and Dr. Collins is the first American to win recognition from the Society. The award was made at the Onnes Conference for Low Temperature Physics at the International Congress of Natural Sciences in Leiden.

Until the last decade, liquid helium — which boils at -452 degrees (below zero) F. and is very useful in the study of atomic structure and energy in metals — was being produced only in tiny amounts. Through development of an open-circuit expansion engine, Professor Collins made possible industrial production of liquid helium in much larger quantities. For his invention Dr. Collins received the John Price Wetherill Medal of the Franklin Institute in 1951. Dr. Collins designed and built his first helium liquefier at M.I.T. in 1946.

Born in Democrat, Ky., in 1898, Dr. Collins received his B.S.A. and M.S. degrees from the University of Tennessee; his Ph.D. in chemistry from the University of North Carolina in 1927. He joined the staff at M.I.T. in 1930.

On September 3-5, Dr. Collins served as chairman of the 1958 Cryogenic Engineering Conference, held at the Institute, which was attended by 500 engineers from the United States and European countries.

President's Annual Report

Widening gap of intellectual achievement, between high school and graduate professional school students, poses fundamental problem for today's colleges, according to the annual report

by J. A. STRATTON

ALMOST a year ago, Technology's President, James R. Killian, Jr., '26, was asked by President Eisenhower to assume an important assignment in Washington. Dr. Killian's absence from Cambridge has placed additional responsibilities on Chancellor J. A. Stratton, '23, who, last November, assumed the additional post of Acting President of the Institute, as recorded in the December, 1957, issue of *The Technology Review*.

The meeting of the M.I.T. Corporation on October 6 was the first such assembly calling for an annual report from Dr. Stratton. In recounting M.I.T. progress during the past year, Dr. Stratton's report deals primarily with current problems arising from the Institute's growing obligation to promote excellence in education.

The Institute has constantly pioneered in developing new and more effective curricula for better educating its students. As in the past, leading educational institutions are called upon to investigate and develop frontiers at one end of the intellectual spectrum. Dr. Stratton is keenly conscious that, today, they are also called upon to make substantial contributions to nationwide improvements in education at the level of the secondary schools. The impact of this double-ended responsibility on M.I.T. is ably set forth in this year's annual President's Report.

Those who have witnessed the spectacular growth of the Institute's manifold activities—especially since the end of World War II—realize that the need for effective liaison and improved communications between the various groups of the Technology family is a matter of increasing importance. That this is fully recognized is clearly indicated in Dr. Stratton's remarks that there is "immediate need to convey to the undergraduate a keener sense of belonging, of personal participation in the great enterprise which is M.I.T." for "today's undergraduate feels himself anywhere but at the center of this particular academic universe."

At a time when the nation's educational system is being critically examined for all possible improvements that may be adopted, Dr. Stratton's remarks will be especially pertinent to Review readers. Those portions of Dr. Stratton's report which review events of the past have frequently been reported in the pages of this publication. For this reason, *The Review* presents here those sections of Dr. Stratton's report which deal with policy matters or with especially newsworthy topics; omitted here are other

sections which have already been presented to Review readers in one way or another.

In recounting changes in the past year, Dr. Stratton states:

The most significant event of the academic year 1957-1958 was the appointment last November of Dr. James R. Killian, Jr., '26, as Special Assistant for Science and Technology to the President of the United States. He was called to Washington at a moment when M.I.T. was most in need of his great, constructive energy. But on the larger national scene, his departure reflected a mounting concern for the state of science in this country. It was evidence of a new national awareness that the hopes for our survival as a free and prosperous nation rest in large measure upon the quality of our education and upon our capacity for scientific research.

Political and economic developments of the past decade and particularly those of recent months, have had a profound influence upon the growth and character of the Institute. It is inevitable that we should respond sharply to these great events, for M.I.T. moves in the midstream of modern life. Indeed, the salient quality of our philosophy of education, of the methods and substance of our teaching, and of our attitude toward public responsibility is a sense of direct relevance to the world and to the times in which we live. This relatedness to the world of action as well as to the world of thought brings to us a variety of problems and responsibilities seldom found within the confines of a university. It imparts an intensity to the life of the institution that at times has seemed excessive; in compensation there are but few of us, whether students or Faculty or staff, who fail to respond to the challenge of participating in a great enterprise or who remain unmoved by the sense of excitement that comes with work in the front lines.

M.I.T. has served and will continue to serve the nation effectively in many ways. Members of our Faculty and Administration have made countless personal contributions to the public interest—many of them at a sacrifice to professional advancement. Theirs is a superb record of achievement and public spirit. Laboratories such as Instrumentation and Lincoln are playing a key role in the development of an adequate national defense. The Schools of Science and Engineering have made notable additions to our understanding of the basic laws and processes of the physical world, and are pursuing imaginative explorations of their application.

Toward Excellence in Education

Public service, defense research, and the broad advancement of scientific knowledge are essential parts of the total mission of M.I.T. But we bear ever in mind that our first obligation, our foremost concern, must be

for the education of our students. If there is any one thing which events of the past year have made clear, it is the imperative need to augment the corps of highly educated men and women in the United States. This need is apparent in every field of professional endeavor. Nowhere is it more critical than in science and engineering. The quality and fruitfulness of American research through the coming decades, the character of industrial statesmanship a generation hence, will be determined by the wisdom and effort we show now in the education of our youth. M.I.T., in the years ahead, can hope to supply only a diminishing fraction of the total number of scientists and engineers essential for the political and economic security of this country, for no private university can keep pace in its growth with this expanding need. There rests upon such institutions as ours, however, a heavy responsibility to provide highest standards of excellence, to set new patterns, to give leadership, and to lift the sights of all.

Four Years to Span a Gulf

The most fundamental problem, and the most difficult with which to cope, is the widening gap between the mean level of academic achievement in the average American secondary school on the one hand and the intellectual maturity of our top graduate professional schools on the other. For at least 30 years, the foremost departments of science and engineering in the United States have compared favorably at the graduate level with the best to be found in Europe. But we can make no such claim for our high schools. This is the gulf that must be bridged in the brief span of four undergraduate years.

For an extended period of our national development this discrepancy had no serious consequence. Relatively few undergraduates chose science as a profession; and among those who did, a considerable number supplemented

their basic training with advanced study abroad. With a few notable exceptions, serious research and development in industry, as currently conceived, were unknown. The basic engineering needs of the country could be met by four-year college graduates with a good grasp of physics, chemistry, and elementary calculus to bolster their professional subjects and shop practice. But World War II and the more recent political developments abroad have brought to light our urgent need for scientists and engineers with a complete command of all the knowledge and techniques necessary to advance science and to exploit it to the utmost for our own use.

As a consequence, the task of bringing even the most talented undergraduate student, in four years, to such a point of intellectual maturity that he may deal effectively either with the requirements of the top-rate graduate school or with the pressures of modern industry, is a great and difficult one.

But the need is also great, and the country looks to M.I.T. and to its sister institutions for leadership.

The basic step toward alleviating some of the pressures on undergraduates in professional schools must eventually be taken within the high schools themselves, and our colleges should join forces in a national effort to lift the levels of achievement in elementary science and mathematics. In this connection, the Institute can be particularly proud of the contributions being made to the teaching of high school physics by the Physical Science Study Project, under Professor Jerrold R. Zacharias.

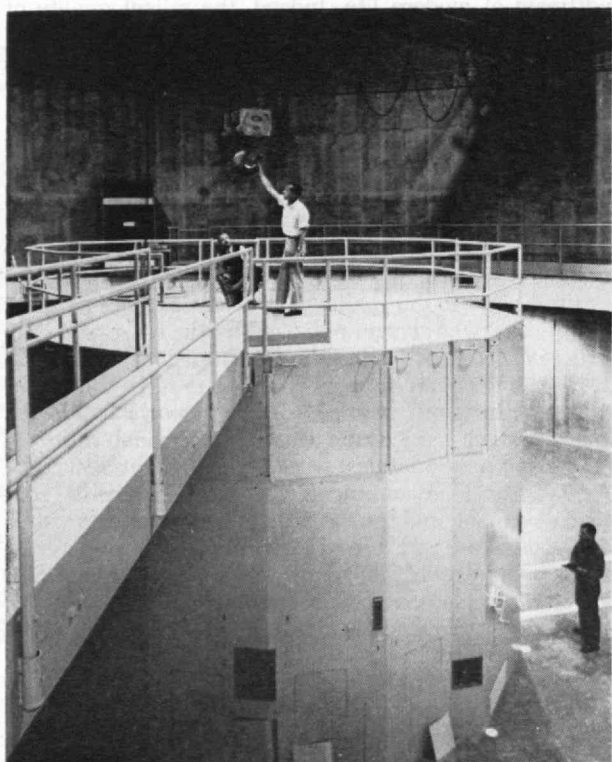
Realistically, however, it may be many years before we can count upon the kind of rigorous training in our secondary schools that is expected of every candidate for admission to a French, German, or Russian technical institute or university. In the interim, we must accept the preparation of the entering freshman as it in fact is. Our task is to develop his confidence as well as his competence and to feed the flame of his interest as he masters the fundamentals.

Toward Independence and Responsibility

The plight of the average undergraduate in any first-class technical school is further aggravated by the fact that he usually expects the same spoon-feeding system of education that marked his secondary schooling. He needs time to understand that from now on he must be his own teacher. It is the true function of a university to inspire the student; to provide him with abundant examples of significant scholarship; to counsel him on the direction and progress of his studies; to furnish him with the most ample resources of library and laboratory; and to afford him the incalculable benefit of intimate association with first-class minds.

The typical entering freshman at M.I.T. is far from ready to cope with such a mature concept of learning. The transition at best is certain to be painful, but we must keep steadfast our aim to help each individual student achieve as easily and rapidly as possible his highest intellectual potential and to develop fully his capacity to pursue a free and independent way.

Finally, in our assessment of undergraduate life at M.I.T., we must take account of the fact that the Institute itself is evolving rapidly into a new kind of university. There was a time, not so many years ago, that our activities were centered almost exclusively in undergraduate education. This is no longer true; today's undergraduate feels himself anywhere but at the center of this particular academic universe. Almost daily in the press he reads accounts of Institute activities in which he has had no part—which he may even assume are entirely foreign to his own interests. He learns of celebrated pro-



M.I.T. Photo

The first privately owned heavy water reactor in the United States was put into operation at M.I.T. during the summer. It will furnish nuclear particles and radioactive materials for research in medicine and industry, and in the basic sciences.

fessors who are members of our Faculty but whom he has not yet met, and he feels that he has missed a fair share of his educational experience. And finally, for many a freshman, a most serious disorienting factor is the discovery that instead of being at the top of his class in a local high school, he is now only one among many exceptionally able students.

These are some of the basic conditions that temper the environment of our undergraduates, conditions which we must deal with realistically if we are to strengthen our educational base. Here M.I.T. has, I am convinced, not only an overriding responsibility but also an extraordinary opportunity.

A Richer Community Experience

This year there have been many new plans and new experiments designed to improve the effectiveness of instruction in many departments. This is a never ending task, and the Institute must be prepared to devote substantial resources to research in teaching and to the development of our undergraduate laboratories. There is much still to be done to stimulate interest in the teaching problem and to reward those who teach with skill and devotion.

But while these measures are important, I think that there is an even more immediate need to convey to the undergraduate a keener sense of belonging, of personal participation in the great enterprise which is M.I.T. A year ago, Dr. Edwin H. Land dealt with this problem in his stimulating and provocative Arthur D. Little Lecture. A variety of interesting projects are being discussed by members of our Faculty, all with the common aim of bringing undergraduates into association sooner with the senior members of our academic community. It is my sincere hope that these ideals will bear fruit.

As a corollary to these developments in classrooms and laboratories, we must take steps to enrich the campus life beyond the provision of bed, roof, and board. The residential program ought to make a major contribution to the intellectual and moral development of all students; and it can, aided by those activities, cultural and otherwise, which do so much to make college life a memorable experience.

Two Views of Engineering Education

Among the current discussions of educational policy at the Institute, none is more complex nor more important than that dealing with trends in engineering education. The issues involved are of fundamental significance, as any action M.I.T. ultimately takes to resolve them will largely determine the Institute's future character and set an example which may affect materially the course of engineering education in the United States.

There are two basic positions. I am tempted to refer to them as the liberal, or radical, and the conservative. These designations are neither quite accurate nor perhaps entirely fair to the respective protagonists, but they are convenient for our present purpose. There are also, of course, a number of people in the middle, or "independents."

The extreme liberal party contends that the traditional curricula of engineering schools are essentially obsolete. They point out that industry itself has passed beyond the stage of simple technology and into a domain of enormously complex problems. As we all know, the industrial importance of research and development has been vastly enhanced. But wholly apart from the laboratory, the engineer today has to deal with a wide range of subjects, which may include such diverse fields as

materials, fluid flow, combustion, or information theories. Whatever it may be, he is unlikely to make important contributions in these areas without the benefit of fundamental and thorough training in physics, chemistry, and mathematics.

As a consequence, no one disputes the new status of research in industry or the need to enlarge the professional group of applied scientists competently trained to work on these new frontiers. The real question at issue is whether or not M.I.T. may be shaping its undergraduate curriculum too strongly in this direction, to the disadvantage of other facets of the engineering profession taken in its entirety. Specifically, how far should we go in discarding all the drafting and design, the shop, and the more practical, immediately useful professional subjects?

On this question our liberal friends argue that the whole broad field of technology is now advancing at such an accelerating pace that the best undergraduate education in engineering will steep the student in basic science and in the true fundamentals of his future profession, leaving him free to decide after his bachelor's degree whether to pursue a career in research, development, design, or industrial management. On this hypothesis an undergraduate curriculum in engineering, centered increasingly in science, mathematics, the basic professional subjects, and the humanities, would approach more nearly the counterpart of liberal education which is the foundation of the professions of medicine and law.

But against this argument our conservative wing—and this includes many of our Alumni as well as some of the most thoughtful members of our Faculty—raises certain serious objections. Granted that engineering rests squarely on science and mathematics, the function of the engineer in society nonetheless differs profoundly from that of the pure scientist. The engineer outside the research laboratory experiences a very different relation to his client or to his firm. He is invested with a different kind of responsibility. He is called upon for a variety of judgments and decisions that are normally foreign to the affairs of scientists. At every point his thinking is tempered by questions of cost and reliability and the problems of maintenance and replacement. These modes of thinking and working, quite different from the methods used to solve differential questions, must be instilled in the student at the earliest possible stage of his development. These are the attributes that will distinguish the builders of industry in the future, even as they have in the past.

The apparently easy way to resolve these contending views is to say that the country needs both types of leaders—the applied scientist, and the more empirical engineer. In this belief, many engineering schools within the past few years have introduced a new curriculum designated, for lack of a better term, as "engineering science." M.I.T. itself has undertaken its share of experimentation in this area. The Department of Electrical Engineering, for example, has instituted a Course, Electrical Science and Engineering, which has a strong emphasis on physics and mathematics; and several other departments have plans for comparable options. An *ad hoc* committee on engineering education has also considered the desirability of experimenting with an entirely new course in engineering science distinct from our existing departments.

However, the more deeply one delves into these difficult questions, the more elusive the answers appear, the less easy their resolution. There is a serious objection, for example, to concentrating a faculty of applied science in a single new department, for this concentration obviously must take place at the expense of our present fields of specialization. Doubts also have been expressed as to whether, in the long run, parallel options—one centered

in applied science and the other expressing the more traditional approach to engineering education—can successfully coexist with one another in a single department.

And there are even more critical questions for the long-range future of M.I.T. What effect, for example, will an increasing emphasis upon mathematical ability have upon the character and quality of the students admitted to our freshman class? Have we unwittingly engaged in a selective process that may work to the ultimate disadvantage of the engineering profession itself?

Clearly these issues in engineering education are of consuming importance, both to M.I.T. and the country. Clearly they are difficult to resolve. It is reassuring, therefore, to observe the vigor and insight with which our engineering faculty is attacking them.

The Year In Review

From a long list of notable achievements, changes, and events of the past year, I select the following for special mention:

Some Educational Advances and Opportunities

1. To meet the changing needs of our technological society, there has been at the Institute this year, as I have described earlier in my Report, a ferment of re-examination and experimentation with the educational program in all schools.

In the School of Engineering, the Faculty Committee on Engineering Education has continued its comprehensive review of our various undergraduate curricula. Some of the areas being studied are: the factors determining a student's choice of an engineering profession, the possibilities of a tutorial system, the replacement of requirements with electives in the last two years, and better opportunities for the gifted student to do independent research. In addition, two separate committees are now also evaluating the role of applied science in engineering education and in the general field of materials, both in teaching and research. These are studies of first-order importance.

In the School of Science, the trend towards flexibility is reflected in modifications of several undergraduate curricula. The Biology Department has broadened the scope of its subjects in biophysics to make them suitable for all science majors. The Mathematics Department has made a thorough reorganization of its course offerings in order to furnish stronger mathematical training for engineers and scientists who are continuing beyond the normal three-semester sequence in calculus. The Meteorology Department is providing needed integration between theoretical and experimental aspects of meteorological study, particularly regarding the possibilities of large-scale control of weather and climate. The Physics Department has devoted major efforts to improving its undergraduate program in order to provide better training, not only for engineers and scientists, but also for those students who want to enter the teaching profession at either the high school or college level.

The School of Industrial Management has continued to enrich its curriculum so that all its students — ranging from the beginning students in management in the Undergraduate Program to the corporate officers in the Senior Executive Program — have intimate contact with the applications of science and engineering to the many complex elements of modern management. The use of high-speed computers, emphasis on economic forecasting, study of policy determinants, evaluation of various factors in the control and direction of finance, and a deeper understanding of society and man himself are only some of the major areas in which research and teaching are now being undertaken by the School.

The Faculty and Corporation have authorized the awarding of the degree of doctor of philosophy in City and Regional Planning. Graduate and advanced study in this important field was greatly enhanced by the establishment during the year of the Center for Regional and Urban Studies, under the direction of Professor Lloyd Rodwin. Research will focus upon the physical environment of cities and regions, the forces that shape them, and the interrelationships between urbanization and society.

In the School of Humanities and Social Studies, the authorization to award the degree of doctor of philosophy in Political Science will open the way for advanced work in such important areas as national security, military technology, and public administration, areas in which the Institute offers unique opportunities for study. M.I.T.'s program in political science is based on a dual recognition: political developments today are heavily influenced by technology; and educated man, regardless of profession, must become more familiar with public policy questions.

It is generally agreed that Americans today must seek an improvement, too, in their ability to use and to understand foreign languages. To help meet this critical need, the Department of Modern Languages has expanded its program in Russian, German, and French language and literature. There is increased emphasis upon the spoken word rather than upon grammar and translation.

2. The activities in nuclear engineering, which until now have been a part of the Chemical Engineering Department, were organized during the year into a graduate Nuclear Engineering Department under the direction of Professor Manson Benedict, '32. While reactor technology and fission now dominate the program, the new group is already active in fusion and thermonuclear reactions. The unfolding activities here and in the related field of gas dynamics will bring together in a joint undertaking several of the departments of both the School of Engineering and the School of Science.

3. During the past year we have established a Center for Communications Sciences, to engage in research in the broad field involving the processing and transmission of information in both man-made and living systems. By providing basic research through collaborative efforts between mathematicians, electrical engineers, physicists, linguists, psychologists, physiologists, and others, we will be able to make notable advances in this challenging area of information theory pioneered by such M.I.T. scientists as Vannevar Bush, '16, and Norbert Wiener.

4. The Physical Science Study Project, under the direction of Professor Zacharias assisted by Professor Francis L. Friedman, '49, has continued to expand its work in planning a new approach to the teaching of physics in the secondary schools. During the summer of 1958, some 350 additional teachers were trained in the aims and methods of this new curriculum, and it is expected that some 12,000 students will be taught the new program this year. Negotiations have been completed to transfer, with the assistance of the National Academy of Sciences, the Institute's major administrative responsibility for the project to Educational Services, Inc., a nonprofit corporation.

5. After a comprehensive study, the Faculty has voted to modify the compulsory first two years of Reserve Officers' Training Corps, beginning with the Class of 1962. This action places all military training at the Institute on a voluntary basis and should produce a better qualified and more enthusiastic corps of reserve officer trainees.

6. The Computation Center, made possible by the International Business Machines Corporation, completed

(Continued on page 54)

U. S. Progress IN SCIENCE AND EDUCATION

Whatever our major national goals may be, the first essential is to achieve better education, better science, better technology. This requires improvement of quality in education and performance.

by ALAN T. WATERMAN

Now that a year has elapsed since the launching of the Russian satellites, when this country was dramatically brought face to face with the need for critical examination of its national effort in science and technology, it is appropriate to consider our progress and to gauge the follow-through of President Eisenhower's stirring and realistic messages to the country of last November 7.

In particular, attention has been directed to the urgent need for developing to the fullest our capabilities in science and engineering research and our education and training in science and engineering.

Some notable progress has been made and some major accomplishments undertaken. President Eisenhower's appointment of James R. Killian, Jr., '26, as Special Assistant for Science and Technology, backed by a distinguished Science Advisory Committee, has been widely acclaimed. The President has approved an education bill which constitutes a forward-looking move to assist in the improvement of our system of education. Initial steps were taken with respect to federal support of basic research, and plans have materialized for the formation of a new agency, the National Aeronautics and Space Agency, to deal with the urgent problem of space research and exploration. Military research and technology have received increased emphasis in keeping with current national defense goals. The President has proposed plans for reorganization of the Department of Defense designed to improve materially the effectiveness of our military potential.

The government has taken these constructive steps. It is now fair to ask: are these enough? Are we as a nation proceeding forthrightly to accomplish what is necessary for maximum progress in science, technology and for the improvement in the education and training of our young people? Furthermore, are we acting with the promptness which the situation demands? Or is there evidence that, as a rebound from our intense interest of last fall, we are in danger of again becoming complacent? As a single illustration, one need only compare the reaction of the public to the launching of the first sputnik with that manifested at the third launching in May.

The answer is that we have only made a **beginning**: the major job is still to be done. In the field of education, there seems to be no immediate prospect of adequate salaries for school teachers, of adequate school buildings and facilities, nor of adequate incentives for recruiting the numbers of competent teachers we shall

require. Congress shows caution about taking action, as do most of the states; the scientific and educational societies lack funds; and local attempts, outside of a few wealthy suburban communities, have come up against the realization that adequate funds are not available for the purpose until something is done about taxes.

As for the support of scientific research, it is generally recognized that the modern dependence of a country upon its technology requires thorough attention to its progress in science. The key to the latter lies in the support of basic research. Forward thinking and plans for dealing with important areas of research have not as yet shown indication of full realization in budget terms. The immediacy here lies in insuring the health and strength of science and engineering in the graduate schools of our colleges and universities, which constitute the stronghold for basic research and for the advanced training of scientists and engineers. The pressing problem for science and engineering in universities is to secure modern laboratories and research equipment, including rather costly equipment for the larger institutions, and to provide for large capital research facilities to be used nationally or at regional centers. In the interest of training future scientists, needs extend to undergraduate laboratories and demonstration equipment. Not to be forgotten are the fundamental needs of our colleges and universities for funds freely usable for maintenance and operation; these are the most difficult of all to secure.

In the meantime, the evidence from other countries and notably the U.S.S.R. shows a determination and a national spirit on the part of the people which seems to be relatively absent from the American scene. The recent educational group which went to the U.S.S.R., under the Commissioner of Education, and likewise the group of university presidents, came away with the conviction that the Russian people see their way clear to world leadership in science and technology. They are apparently dedicated to this — not in the sense of military competition but rather of achieving world supremacy without the need of military domination. Among other nations, we shall ultimately have to reckon with the genius for organization and the industry of the German people, the industry and learning ability of the Japanese, and the industry and potentialities of the Chinese.

We appear to forget that as a nation we live in a competitive world and shall continue to do so. It seems abundantly clear that we shall rapidly lose in

competition, unless we can show more determined and constructive efforts than during the past years.

It is clear that success in the requisite effort depends fundamentally upon the understanding of the problem by our people and our determination to achieve these goals. Under our democratic system, no segment of government, whether federal, state or local, can succeed in securing necessary action programs or funds to carry them out unless our citizens understand, actively endorse, and indeed participate in the steps that need to be taken. In short, the wholehearted co-operation of the people of the country is necessary to achieve the goals which the President has pointed out so clearly. Most important here is a realization that this is not a single emergency but a continuing — possibly a permanent — one. In this modern world there can be no relaxation of our determination to compete successfully and continuously.

Admittedly these questions are complicated by several issues: (a) the need and extent to which the federal government should take action and provide funds for education and for educational institutions in the face of a traditional policy of leaving such matters to state and local authorities; (b) the development of our full capabilities for national security and world competition without jeopardizing our economy; (c) the realization of national goals while maintaining individual initiative and achievement of individual wants and ambitions; (d) attainment of full development of individual talents and aptitudes while dealing satisfactorily with the demands for education for all.

While these questions are important and should be resolved, we dare not allow these to becloud the main issue: we must progress in our science and technology and in the education and training of our citizens with all the effectiveness and thoroughness we can muster. We cannot afford to delay in arguments as to how we do them.

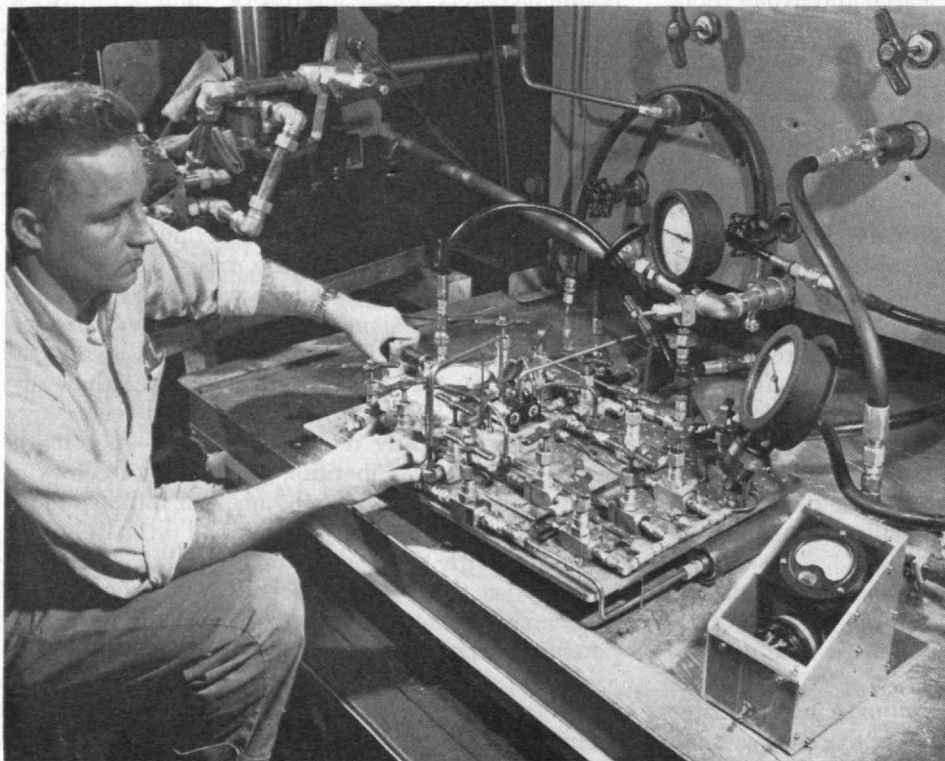
During the past year the recession has brought us face to face with one of our most serious difficulties (b. above), namely, how we can develop our full capabilities and still remain financially solvent; in other words, how to provide for the increasingly costly technological developments necessary for national security without endangering the nation's economy. A grave danger here is that, for reasons of economy, we fall short of developing our capabilities in science and technology.

We can only insure the possibility of full protection of national security by giving every encouragement to scientific research (as contrasted with development and production). It is only in this way that we can achieve the ideas and the breakthroughs which promise clear superiority: it is only in this way we can insure that the developments we undertake are modern and up-to-date in every detail. The results of such research, in competent hands, are never without value. Even when no breakthroughs appear, the total effort always brings a possible breakthrough closer.

It should be noted that the costs of research are very small as compared with those of development. Only about 4 per cent of national funds for research and development go into basic research.

As history amply records, the most epoch-making scientific discoveries have come from basic research. But basic research, being exploration into the unknown, by its very nature cannot predict exactly where these breakthroughs will occur. Therefore, comprehensive support of research has to be undertaken in order to overlook no opportunities. This should be regarded as an investment, the precise spots where high returns occur being unknown in advance. With full support of research, both basic and applied, we then have full exploitation of the potentialities for development and production. Incident-

(Continued on page 48)



The close interrelationship and interdependence of various kinds of engineering (as represented, for example, in servomechanisms or systems engineering) emphasizes Dr. Waterman's view that "The pressing problem for science and engineering in universities is to secure modern laboratories and research equipment, including rather costly equipment for the larger institutions, and to provide for large capital research facilities to be used nationally or at regional centers."

M.I.T. Photo

On Tour with the M.I.T. Choral Society

Approximately 75 members of the M.I.T. Family, touring a dozen European cities, demonstrate that science and the arts can go hand in hand

by ALICE JEGHELIAN

AMONG the many groups who toured Europe this summer for every reason from simple sightseeing to collecting butterflies, the European concert tour of the M.I.T. Choral Society slips by almost unnoticed. Yet the particular experience enjoyed by this group of young men and women is unique, not only compared to that of the ordinary American tourist but also to the several other American groups traveling under some sort of musical aegis, either professional or amateur. Its story is worth noting.

The M.I.T. Choral Society is not a college glee club, though it bears the name of the Massachusetts Institute of Technology. Its membership comprises a cross section of the entire Institute "family." Members' ages vary from 18 to 48. Members' incomes begin in the minus category. Students, scientists, engineers, instructors, technicians, secretaries, student wives, altogether numbering some 125 people (approximately half of whom made up the European contingent) — with at least two things in common — M.I.T. and a passion for choral singing: This is the M.I.T. Choral Society founded and directed by Klaus Liepmann, Professor of Music at M.I.T.

To organize a group of this size for a trip to Europe is a big job. To arrange a concert tour also is something short of a Herculean task and at best a full-time occupation for one person. W. Paul Jensen, '50, one of the basses, managed to do it in addition to his own job as engineer and research associate in the Department of Chemical Engineering at the Institute.

Financing the trip also fell on the chorus itself. Contrary to common assumption, the expenses were met almost completely by the individual contributions of each member and by group fund-raising efforts such as sponsoring concerts, and so on. For months Miss Alison King, an alto in the chorus and treasurer for the trip, kept painful track of the bank balance as it slowly crept toward the desired goal. The budget was modest and, relatively speaking, skimpy. The Choral Society's tour would not be a luxury one!

But what it lacked in cash it more than made up in another negotiable item — good music. When the chorus boarded its chartered B.O.A.C. airplane on the evening of July 2, 1958, each member carried with him no less than five pounds of music. This impressive package (besides consuming a substan-

tial portion of the 44-pound airplane baggage allowance) contained a repertoire unlike that of any college glee club. Included were the classical masterpieces, *Magnificat* by Bach, *St. Theresa Mass* by Haydn, more modern selections like Honegger's *King David* and Copland's *In The Beginning*, and other contemporary pieces such as Büchtger's *Auferstehung nach Matthäus*, Ives' eight-part *67th Psalm*, Hovhaness' *Transfiguration*, and Finney's *Pilgrim Psalms*. This is a repertoire both challenging in depth and variety, and certainly rich fare for the listener.

Thus on Wednesday evening, July 2, 60 members of the M.I.T. Choral Society, a few nonsinging husbands and wives, their conductor Professor Liepmann, and his singing wife, a number of children (as yet nonsinging), and four soloists — Catherine Rowe, soprano, Margaret Tobias, alto, Donald Sullivan, tenor, and Paul Matthen, bass — took off from Logan Airport for Paris. It was an economy flight, but the choristers were accustomed to crowded onstage conditions. When one of the airplane's superchargers failed to operate the air conditioning, the people in front simply moved back to visit with their friends in the air-conditioned rear until an alarmed stewardess begged them to return to their seats as the airplane was getting off balance. At this point no one minded. Spirits were high for more reasons than the champagne toast that had been served earlier (compliments of the travel agent).

Eighteen hours (mostly sleepless) and countless games of bridge later, the chartered airplane landed in Paris. Here the concert tour was to begin, with two concerts scheduled for Tuesday and Wednesday of the following week: one at the St. Eustache Church (one of the oldest churches in Paris, famous for its excellent music); and the second at the American Church on the Quai D'Orsay. There were daily rehearsals at the Paris Conservatory of Music with the conservatory orchestra, and there were periods of enforced rest before each concert. When the American Church unexpectedly invited the chorus to sing at Sunday morning service, this too was fitted into the schedule.

Meanwhile, the group got settled in their bargain hotels — some five or six little establishments in the heart of the Latin Quarter near the Sorbonne. For approximately \$1.80 a night (a marvelous figure for the Choral Society's coffers!) one had a room plus

breakfast. Of course, for that price one doesn't expect to find an elevator—especially in a five- or six-story building. And if the beds feel damp, "eet ees only because the blankets have just been washed, monsieur." The 30 single women who were assigned most unimaginatively, they claim) to one hotel now tell how the building was plunged into darkness three times in a row the evening they arrived. One also says the porter blew out a fuse as he tinkered with a lamp in her room. The others are more inclined to believe that the sudden, unaccustomed use of all the electricity in all the rooms at once was too much for the ancient wiring. Baths also became a rarity, since none of these structures boasted more than one bathtub (if any) and that was usually hidden behind two locked, unmarked doors. This, in a way, is the saga of the bathless singers!

While countless Americans have, in the past, seen Paris from their first- and second-class tours, it is quite again another thing to catch your first glimpse of Notre Dame as you hang onto a strap of a rickety old bus crowded with commuters from the Boulevard St. Michel or *Boulemiche* as it is known to the students. This was the Choral Society's kaleidoscopic introduction to the city as they dashed off in the mornings to rehearsal at the Paris Conservatory. No one dreamed of taking a cab, for by now the mysteries of the metro and bus systems had become common knowledge. On their free time the singers roamed at will all over the city. Some rented bikes. Others went on picnics. One tenor spent most of his time in the American Consulate tracing a lost passport. And there were parties with the students of the French orchestra.

It was off season for concerts in Paris. Even André Marchal, the well-known blind organist at St. Eustache, upon whose personal invitation the Choral Society first began making plans for a European tour, was not optimistic about the size of audience that could be expected. Concert night proved otherwise. The huge center section of St. Eustache was filled to capacity. The singers, tense and silent, waited for Professor Liepmann to take his place before them. A sudden hush in the audience prefaced his appearance. The singers watched. As their voices lifted for the first time within the lofty interior of the beautiful old church, the thrill of that moment and of the whole trip came upon them.

A church audience and its reactions are very difficult to judge. In addition to the two church concerts in Paris, the Choral Society was slated to appear twice more in churches—the Abteikirche in Amorbach, Germany, and the small church in Weikersheim, Germany. But singers experienced in church music know that an audible applause is not the only means of judging their work. The expression on an old woman's face, the alert, expectant eyes of two students sitting in the front row, the peaceful composure of an elderly, mustachioed gentleman as he sits with both hands folded on his cane before him, the half-smile of a plump woman in a faded sweater, the enrapt silence of a small child, a young couple oblivious of each other—all these are weather vanes to the sensitive eyes of a singer.

For the M.I.T. Choral Society, St. Eustache was just the beginning. Here the results of many months of preparation and the impact of the message they were imparting were first realized. One didn't need to understand French or German or English to know what a listener meant when he warmly shook a singer's hand after a concert. This feeling was prevalent everywhere the chorus went. In an excellent review of the Choral Society's concert in Amorbach the *Rhein-Neckar-Zeitung* wrote: "In order to further German-American cultural relations, no better agent could have been commissioned than this 60-voice choir from the most important institute of technology of the U.S.A."

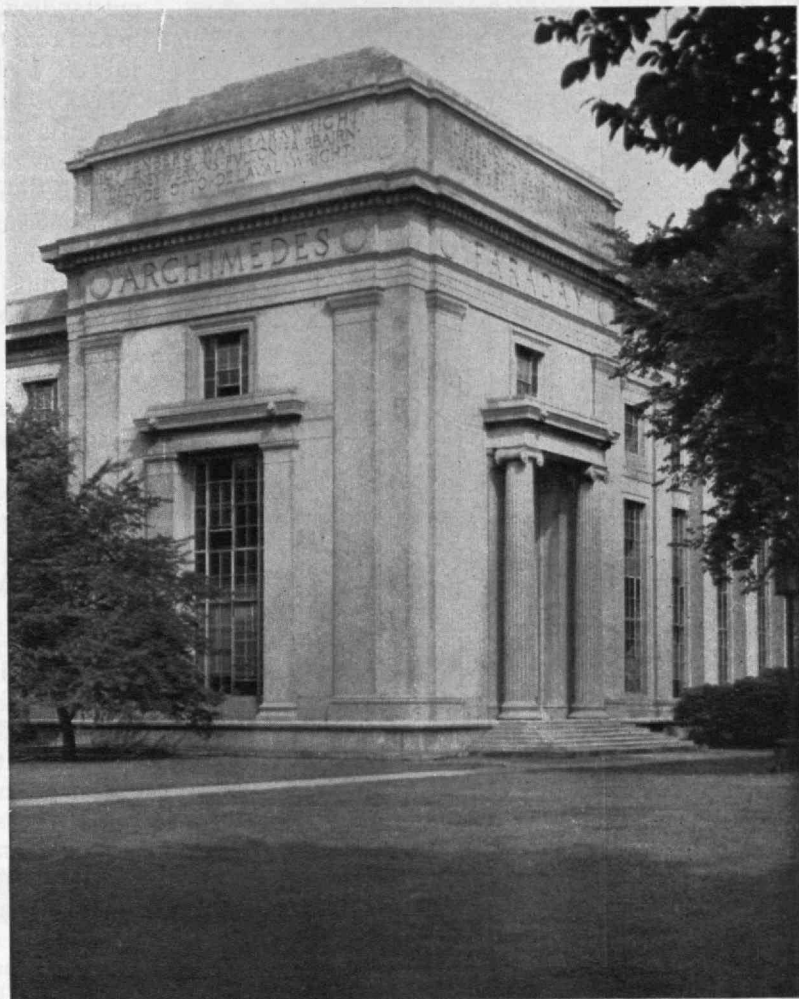
Paris will always hold special memories for the Choral Society. One of the most significant will be the telegram from Mme. Andrée Honegger, widow of the composer. On the eve of the choir's first performance of *King David* she wired her regrets that she could not be there, at the same time expressing her deep appreciation of the event. Also among the group's special souvenirs will be their first European "fan letter" in the form of a calling card from a distinguished French musician declaring her "profound admiration" for the Choral Society's two Paris concerts.

Moving days for the chorus were always incredible events. Like everything else, this, too, was a "do it yourself" operation. Busses were hired, whole coaches on trains were reserved, and the most efficient porters on the railroads those days were none other than the tenors and basses of the M.I.T. Choral Society. Whenever a train stopped, women were hurried off first. Then, thanks to the design of a European railroad coach, every window on the platform side of the car was magically open and within seconds all of the baggage for some 70-odd people had come spewing out of the windows onto the platform. The last such event was clocked at 40 seconds!

The ambition of many American musical groups this past year has been to sing in the American Pavilion at the World's Fair. For the Choral Society it became a reality. In this respect it was a success. The Paris Conservatory Orchestra accompanied the chorus to Brussels. Days of rehearsal in Paris had whipped into final shape the program for presentation at the World's Fair the next day. After the long day's trip from Paris to Brussels, both chorus and orchestra were housed in the sprawling "Motel Expo" on the outskirts of the city, which was built especially for the World's Fair and where every unit, appropriately named after a composer, housed some 500 guests. Here the singers were delighted to find showers (one for each wing of only 50 people), and while the orchestra went off for an evening's spree at the Fair, the chorus spent their "enforced rest" waiting in line for the luxuries of this modern convenience.

The next morning found chorus and orchestra arriving early at the Fair Grounds and hustled into the American Auditorium for rehearsal. The concert that afternoon was one of the strangest experiences the Choral Society has ever had. After each piece on the program, a large number of people in the audience

Architectural beauty of the pylon of one of the Institute's main group of buildings in the Great Court compares favorably with the glimpses of European architecture noted by members of the M.I.T. Choral Society while on concert tour on the continent last July. Welles Bosworth, '89, architect of the M.I.T. buildings constructed in 1916, has long been a resident of France.



would get up and leave, and an equally large number would come floating in, quite casually. Even a pause in the middle of a piece was not sacred. The singers confess that never before have they sung to such an amorphous, fluctuating audience. They now feel that they have not performed at the World's Fair but have been exhibited there for the quick perusal of the hurried visitor.

But Brussels, too, had its satisfactions in other ways. The Belgian Consul in Boston and his wife, Mr. and Mrs. Albert Navez, who were in Brussels at the time, personally welcomed the chorus when it arrived at the Brussels railroad station. The sincerity, friendliness, and hospitality of this couple will long be remembered in the hearts of the singers. Finally, one complete but at best frustrating day at the World's Fair, topped by a heavy downpour of rain, brought the Choral Society's sojourn in Brussels to an abrupt and soggy end.

Arriving in Germany was like going back home for many of the singers who, two years before, had spent three weeks there on the Choral Society's first European concert tour. Hamburg, Darmstadt, Amorbach, Rothenburg, Weikersheim, Munich — each stopover a unique and stirring experience. In Hamburg, 40 of the most hale and hearty singers were put up in a hostel about one hour's ride outside the city. Here the third chapter in the saga of the bath was written. The singers bunked 10 in a room. What passed for a shower under the circumstances was in reality a foot-bath with a very low spout! It was fairly simple to get 10 people in a room containing five double-decker bunks. The real problem was what to do with all the baggage, since there was virtually no space to hang up clothes, and people literally had to live out of their suitcases. Here, too, the singers discovered the typical hostel-type bed linen — that is, a "reversed-double-envelope" sheet approximately in the

form of a sleeping bag. You crawled into the larger envelope, and the pillow was tucked into the other. This was unfortunate if you happened to be tall!

For the Choral Society the many highlights in Hamburg ran from one extreme to another. One day they attended a formal reception held in their honor by the Minister of Culture in Hamburg. The next day they did the town on the "Reeperbahn," Hamburg's district of bright lights, night clubs, and girlie shows. The reception took place in the city's historic Town Hall (*Rathaus*) where the Minister, acting as the Mayor's Deputy, personally shook hands with each singer and then in a short, extremely cordial speech expressed his appreciation of the work these young people were doing and its significance in international relations. That evening the Minister had a front row seat at the concert.

The Hamburg Radio Orchestra accompanied the chorus. It was an excellent ensemble of professional musicians with whom the singers were very proud to work. The concert took place in the auditorium of the Hamburg Radio Station, a hall quite different from any the Choral Society had ever used. The audience seats rose up sharply on three sides of the stage — which was really not a stage but a platform. A variety of unused radio equipment hung precariously above it, and a large radio sound box provided an unusual setting in the rear. By this time, however, the choir had quickly learned to adapt itself easily to any singing conditions.



Pylon at entrance to Building 3 — facing the Great Court — a part of the main group of the Institute's buildings.

A morning spent in a recording session wound up the Choral Society's stay in Hamburg. Once more a mass moving operation by bus and train transported the large group on a day's trip southward to Darmstadt. This was the first in a series of three concerts arranged for the Choral Society by a young German student whom they had met two years ago. The singers will never forget him — Gerd Miedel, engineer, violinist, booking-agent par excellence, and friend. At Darmstadt, the chorus from the best technical school in the United States had an informal reunion with the orchestra from the best technical school in Germany — the Darmstadt Technische Hochschule, with whom they had given concerts two years earlier. Here the concert took place in the school auditorium, the same hall where one alto remembers having met "George," a handsome second-violinist who, she learned to her dismay, had since received his diploma and was employed in Berlin.

The second concert in the Gerd Miedel circuit was in Amorbach. Amorbach is a small, picturesque town, which, for all its humble size and rusticity, boasts two big churches. One of these is the Abteikirche, perhaps the most beautiful example of baroque art and architecture in all of Germany. To have the opportunity to enter this unbelievable spot, much less to sing in it, is good fortune in itself. The M.I.T. Choral Society was doubly fortunate. It must also have been inspired, for the concert performed here, with an extremely difficult, all *a capella* program, was one of the best on the tour and received

outstanding reviews, two of which are excerpted here. From the write-up in the *Bote vom Unter-Main*, July 22, 1958: ". . . What this chorus of the largest American institute of technology achieved was excellent to such an extent that it would be difficult to name another chorus of equal quality." From the *Aschaffener Volksblatt*, July 22, 1958: ". . . A homogeneous, full and rich choral sound (was combined) with purest intonation; most subtle dynamics with exquisite phrasing; and clearest transparency of polyphonic texture with delightful harmonic sonorities. . . . A kind of music-making which one experiences only with the very greatest of musical organizations."

Rothenburg-Weikersheim, next stop on the schedule. While staying and rehearsing in Rothenburg, the Choral Society commuted to Weikersheim for its next-to-the-last concert. Again the program was all *a capella* and an encore of the success of Amorbach. The small Weikersheim church was filled, literally to the rafters, with people even peeking out from behind the organ pipes! Sitting in the audience that night was the Prince (related by marriage to Queen Elizabeth) and owner of the impressive Weikersheim Castle which the chorus had visited earlier on a private tour. It was a very young castle or *Schloss* as castles go, being only some 200 or 300 years old, but entirely satisfactory to the wide-eyed singer.

The Choral Society was now approaching the climax of its 1958 tour — Munich and a concert for the choral program of the city's 800th-year anniversary festival. At any other time, Munich would have attractions enough to hold its own. It has justly been called the "Paris of Germany." Add to this the color, the crowd, and the pageantry of a huge birthday celebration and you have the setting in which the Choral Society's most important concert was to take place.

It was, to begin with, an honor to be invited to participate in the festivities. The invitation had been extended to Professor Liepmann and the chorus by Herr Fritz Büchtger, one of the foremost German composers on the musical scene today. It was only fitting that a number on the Choral Society's program should be Büchtger's own *Auferstehung nach Matthäus*.

In Munich the chorus was treated as guests of the city. Hotels with breakfast and daily meals at a nearby restaurant were provided. The restaurant turned out to be the Schelling Salon which has a reputation for its substantial and typically German fare. To their surprise, the singers discovered that in an attempt to please their American guests the restaurant was serving what it considered to be American-style meals. The attempt was well meant, even if the end result was questionable.

The concert was scheduled for Saturday, July 26. During the four days preceding the event, the chorus rehearsed regularly. When they met for the first time with the Graunke Orchestra, which was to accompany them, the singers were thrilled. It was by far the largest orchestra they had had on the tour and one of the best in Germany. With a certain amount of trepidation, therefore, the chorus began singing
(Concluded on page 40)

BUSINESS IN MOTION

To our Colleagues in American Business ...

The initials T.A. stand for Technical Advisor. This is not a fancy title for the Revere representatives who call on prospects and customers, but rather one that designates the man having that title as being thoroughly schooled and qualified to aid manufacturers in the proper selection of non-ferrous metals.

To be a Revere Technical Advisor a man must be completely conversant with metallurgy and its application to present-day production. And, if you ask him the type of question that cannot be answered on the spot then he is qualified to present the problem to Revere's Research Laboratories in a manner that will result in a satisfactory answer.

To show you how Revere's Technical Advisory Service can render you valuable aid we cite the following example: Years ago the country's oldest manufacturer of milk coolers came to Revere with the idea of building copper-lined coolers to supplant their galvanized ones which had produced corrosion and other problems.

Revere's Technical Advisory Service worked with them in the designing of a satisfactory product. It took time, plenty of time, and experimentation. But the result was well worth the effort ... a deoxidized Revere copper for the lining and Revere Copper Tube for the heat exchangers. But Revere's service did not stop there. For in order to keep down costs the manufacturer called on Revere's Technical Advisory Service, from time to time, to help them redesign their

cooler for greater efficiency and economy. Revere Research also showed this manufacturer how to overcome their soldering and welding problems.

Because of the continuing efforts of Revere's Technical Advisory Service, in connection with Revere's Research Laboratories, this manufacturer is today in the position of being able to offer a most efficient cooler at the least possible cost. Claims of this manufacturer for this cooler are that it will cool milk, uni-

formly from top to bottom without mechanical refrigeration and electricity. That the cream on top will never warm up. That the cooler produces continuous 24-hour cream line cooling which removes the heat from the cream line on the top as well as from the milk on the bottom. That temperature of the milk always goes down, never up, between milkings...not one B.T.U. of heat that passes through the side walls or the bottom ever reaches the milk. This is still another example of how Revere's Technical Advisory

Service was able to fit the metal to the job in order to produce a superior product at the least possible cost.

Practically every industry you can name is able to cite similar instances. So we suggest that no matter what your suppliers ship you, it would be a good idea to take them into your confidence and see if you cannot make a better product at lower costs by specifying exactly the *right* materials.



REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

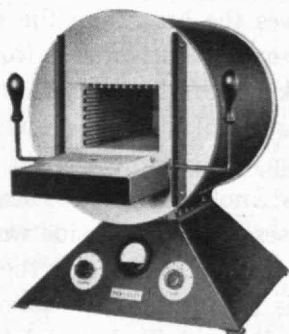
Executive Offices: 230 Park Avenue, New York 17, N. Y.

HEVI-DUTY

IN STEP
with tomorrow's
stepped-up
DEMANDS

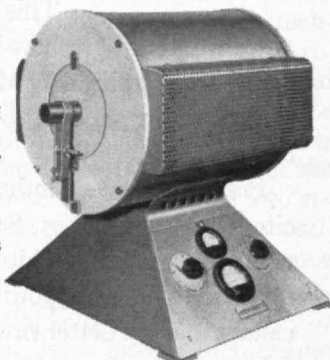
LABORATORY FURNACES

COMBUSTION TUBE FURNACE — Hinged tube furnaces are available in various sizes with temperature ranges to 1800°F or 2200°F.



MUFFLE FURNACE — "Multiple-Unit" Muffle furnaces have a maximum temperature of 1850°F. Temperature indicating and controlling devices are located in the pyramid base for full protection and visibility.

HIGH TEMPERATURE TUBE FURNACE — Temperatures to 2600°F. can be reached in this furnace. Other Hevi-Duty laboratory furnaces have maximum temperatures as high as 3000°F.



HEVI-DUTY ELECTRIC COMPANY

MILWAUKEE 1, WISCONSIN

Harold E. Koch, '22, President
Elton E. Staples, '26, Vice President
Chester Meyer, '36, Assistant Secretary

CHORAL SOCIETY ON TOUR

(Concluded from page 38)

with them. The musicians at first seemed not particularly impressed and somewhat indifferent. Their expressions changed after hearing the choir's rendition of the Büchtger. But they applauded spontaneously when they heard the *a capella* 67th Psalm for eight parts by the American composer, Charles Ives. All signs pointed to a good concert.

The new auditorium of the *Residenz*, a former palace — now a partly bombed-out shell and partly rebuilt — was the scene of the concert. The Choral Society's performance was the finale of Munich's Choral Week, and the "Saturday-night" audience that turned out for it was sophisticated in both looks and musical taste. A threefold test faced the singers: orchestra, auditorium, and audience. They met the test and passed it in extraordinary fashion. From program to performance the concert was eminently successful. On Monday, July 28, 1958, the *Münchner Merkur* said: "... an unusual program from Bach to Büchtger — studded with difficult intonations — were some of the highlights of the evening." The chorus was particularly pleased with the following comment from the same review: "The most outstanding accomplishment, though, was Büchtger's chamber oratorio, *Die Auferstehung*. Liepmann succeeded in presenting the most impeccable performance of the work so far in regard to the chorus. By concentrating on pure vocal sounds he developed them into a shining transparency." And perhaps the best description of the M.I.T. Choral Society itself was that found in the *Süddeutsche Zeitung, München*, July 30, 1958: "... a thoroughly musical, eager chorus of laymen which has set high goals for itself and reaches these goals throughout."

TREND OF AFFAIRS

(Continued from page 25)

their interest and poise throughout the season. The won- and loss-record of four and 12 does not indicate the ability and desire of the players who were in every ball game until late innings.

The leadership of Captain Robert W. Witte, '58, defensive ability of outfielder Eric H. Hasseltine, (Continued on page 42)



"Precision-Gauged" HAIRSPRINGS

More than 25 years' experience making all types of hairsprings for critical instrument applications. High volume production with absolute uniformity.

PRECISION PRODUCTS COMPANY INC OF WALTHAM
WALTHAM 54 • • • MASSACHUSETTS



Photograph of the repetitive orbit of a 20 micron diameter charged aluminum particle suspended in a vacuum chamber by oscillating and static electric fields.

ELECTRODYNAMIC ORBITS

By the application of properly chosen alternating and static electric fields, electrically charged particles can be maintained in dynamic equilibrium in a vacuum against interparticle and gravitational forces. This is illustrated in the above photograph of the orbit of a charged dust particle. During the time of exposure the particle traversed the closed orbit several times, yet it retraced its complicated path so accurately that its various passages can barely be distinguished.

The range of particles of different charge-to-mass ratios which can be contained in this manner is determined by the gradients of the static and alternating electric field intensities and by the frequencies of the latter. In the absence of static fields and for a given electric field strength, the minimum frequency required for stable containment of the particles is proportional to the square root of their charge-to-mass ratios. Thus, charged colloidal particles require the use of audio frequencies, atomic ions need HF frequencies, while electrons require the use of VHF and higher frequencies.

Under the confining influence of the external fields,

the particles are forced to vibrate with a lower frequency of motion which is determined by the external field intensities, space charge, and the driving frequencies. If the initial thermal energy is removed, a number of particles may be suspended in space in the form of a crystalline array which reflects the symmetry properties of the external electrodes. These "space crystals" can be repeatedly "melted" and re-formed by increasing and decreasing the effective electrical binding force. These techniques offer a new approach in the study of plasma problems and mass spectroscopy in what may be properly termed "Electrohydrodynamics."

At The Ramo-Wooldridge Corporation, work is in progress in this and other new and interesting fields. Scientists and engineers are invited to explore current openings in Electronic Reconnaissance and Countermeasures; Microwave Techniques; Infrared; Analog and Digital Computers; Air Navigation and Traffic Control; Antisubmarine Warfare; Electronic Language Translation; Radio and Wireline Communication, and Basic Electronic Research.

The Ramo-Wooldridge Corporation

LOS ANGELES 45, CALIFORNIA

ENGINEERS PHYSICISTS MATHEMATICIANS

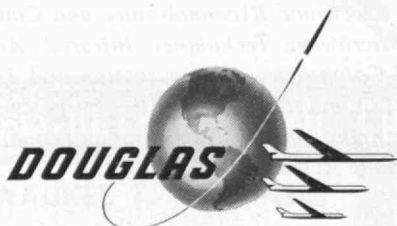
Investigate the outstanding promotion opportunities at Douglas.

It stands to reason that the biggest field for advancement lies where the biggest programs involving advanced technology are under way.

At Douglas, massive missile, space and transport projects in both military and commercial areas have created a continuous demand for engineers and scientists with backgrounds *outside* as well as in the avionics, aircraft and missile fields.

As these projects grow in scope, the multiplying supervisory and executive openings are filled by Douglas engineers from within the company. This promotion policy has made Douglas a prime organization for the engineer who wishes to advance in his profession.

For further information, write to Mr. C. C. LaVene, Douglas Aircraft Company, Inc., Santa Monica, California. Section N.



the most respected name in aircraft,
missile and space technology

TREND OF AFFAIRS (Continued from page 40)

'59, Fulbright scholarship winner Robert J. Hecht, '58, and sophomore first baseman Neil P. Fitzpatrick, '60 — along with the enthusiasm and hustle of the team — provided the players and coach with an interesting and rewarding season.

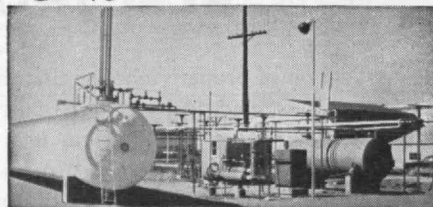
The outstanding manner in which Gerald J. Hornik, '60, carried out his varsity baseball managerial responsibilities, and the excellent leadership of the freshman baseball team by Coach Christy P. Emerson, a graduate student in the City Planning Department of the Institute's School of Architecture and Planning, deserve mention.

Basketball

Varsity — The team's record of five wins out of 20 games played could have been quite a bit better if we could discount two factors: namely, had five games lasted a minute or two longer; and had we had the services of Robert J. Polutchko, '59, for the first 10 games of the season. Five games were lost by three points or less. Polutchko, who was on Coop the first semester, in the last 10 games scored four fewer points than the teams' high scorer scored in 20 games. He also averaged 12 rebounds a game. Captain McClaran Jordan, '58, once again led in assists with 45. Eric H. Hasseltine, '59, came to Tech from Hamil-

(Continued on page 44)

Gas STANDBY



Packaged 12 mcfh plant designed and built by Draketown for ...

- ★ Utility or Industrial standby
- ★ Peak shaving and augmentation
- ★ 100% Town or plant supply

A Packaged Draketown Propane Plant will help you reduce demand charges; provide a supply of gas during curtailment periods ... at the turn of a valve ... or supply that outlying section or plant 100% if desired.



PROPANE PLANTS

"Good Gas Insurance"

If you have a gas problem, we can help you. We operate from coast to coast and overseas.

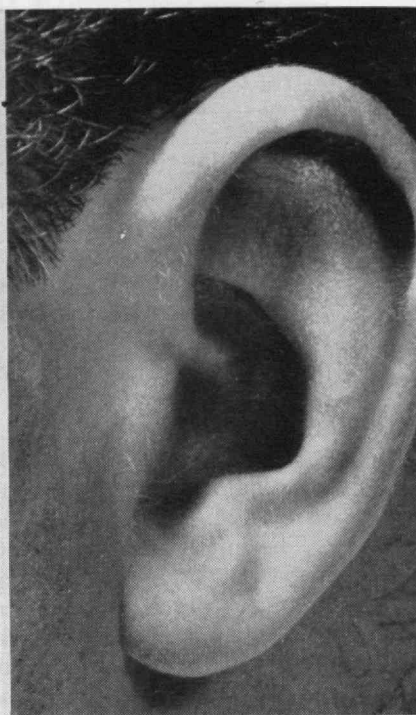
Phone or write today — no obligation.

DRAKE & TOWNSEND

INCORPORATED

Consulting • Design • Engineering • Construction

11 WEST 42ND STREET • NEW YORK 36, N. Y.



Need a new
corrugated
packaging
idea?

Listen

to your H&D
Packaging
Engineer



HINDE & DAUCH

Division of West Virginia Pulp and Paper Company

Sandusky, Ohio

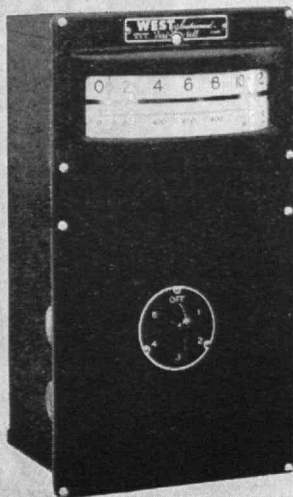
15 Factories • 42 Sales Offices

NOW

a single, central instrument
instantly reads temperatures
at up to 23 locations

WEST MULTI-POINT

HIGH RESISTANCE INDICATING PYROMETERS



See us at the Plastics Show,
Nov. 17th-21st, Chicago,
Ill. Booth #232.

William C. West ('11) Chmn.

Canadian Representatives:
Upton, Bradeen & James
English Plant: cable
WESTINST, London

**4355C W. Montrose Ave.
Chicago 41, Illinois**

Pilot plants, laboratories, power plants, ships and industrial processors are using this efficient and economical method. A Veri-Tell pyrometer, selector switch and terminal panel (plus thermocouples and leads) comprise the unit. Wide selection of scales and ranges. Where thermocouple leads must be of different lengths, calibrating spools may be added.

MODEL IN

Series #3-5-11-17-23 Position, less thermocouples and leads*, \$95-\$135.

MODEL ISN

Series as above with reference setting.

THERMOCOUPLE SWITCHES

for use with existing instruments.

FREE—bulletin IN-1 available on request.

WEST Instrument CORPORATION

CHICAGO

SALES OFFICES IN PRINCIPAL CITIES

*For standard thermocouples and lead wire, write for Pyrometer Accessory Catalog.

$$P_{\text{SUCCESS}} = P_1 \cdot P_2 \cdot P_3 \dots P_n$$

RELIABILITY

Reliability is one of the major problems involved in modern electronics and missile systems. At Space Technology Laboratories, the emphasis placed on reliability is indicated by the fact that the participation of those concerned with reliability begins with the inception of each program.

There are a number of openings on our Staff for engineers and scientists with experience in the following fields:

SYSTEMS

Basic procedures required in organizing and putting into effect reliability programs for major systems.

DESIGN

The reliability effects of the design and packaging of electronic and mechanical systems including selection of components and materials.

ENVIRONMENT

The design, conduct and analysis of laboratory environmental tests utilizing a variety of instrumentation and test equipment.

STATISTICS

Within the limitation of small samples, the identification of reliability trends, utilizing operations research techniques.

Further information may be obtained by writing to:

Mr. James M. Benning

SPACE TECHNOLOGY LABORATORIES

5730 ARBOR VITAE STREET
LOS ANGELES 45, CALIFORNIA

TREND OF AFFAIRS

(Continued from page 42)

ton via the "three-two" plan and wound up third high scorer. Sophomore Herman N. Burton, '60, showed flashes of greatness and should have a much better year next year.

Coach Burke was tremendously impressed with the desire to win that was evident all season. No matter what the difference in the score, every Tech opponent could not relax for a moment in any given game.

Freshman — The 1957-1958 freshman basketball team paints a typical picture of the students representing M.I.T. in the intercollegiate program.

The initial call for basketball candidates resulted in try-outs by students who had prep school backgrounds from Egypt, Mexico, California, Texas, Illinois, Montana, Ohio, and 30 other scattered states. When the final roster was completed, there was only one team member from Massachusetts on the squad. The previous playing experience ranged from no experience in organized participation to a member of the Illinois State Championship Team. The "timber line" of the players ranged from 5'7" to 6'3".

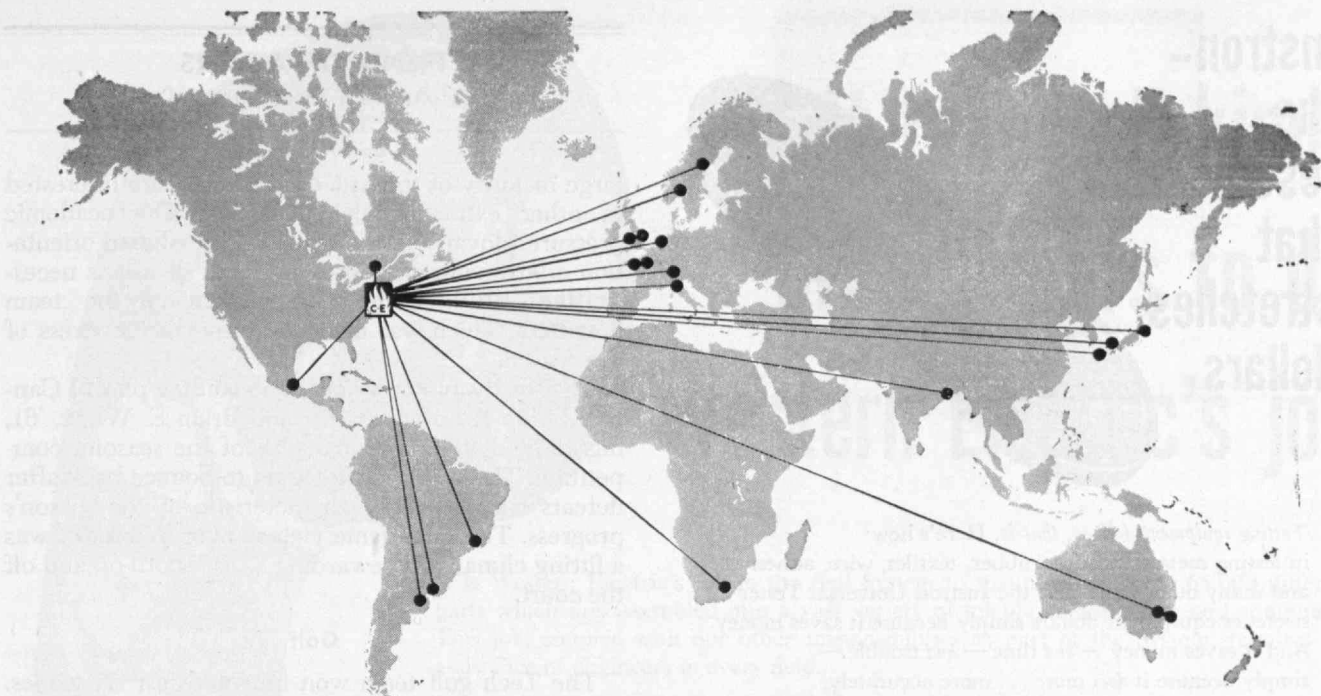
Academically, the squad was typical of M.I.T. team squads with the average team term rating higher than the average team rating of the M.I.T. student. A

(Continued on page 46)



**ASK THE
AEROFIN MAN**
for the practical solution
to your problem of
HEAT EXCHANGE
in heating, cooling,
air conditioning or process

AEROFIN CORPORATION
101 Greenway Ave., Syracuse 3, N.Y.
Pioneers in Light-Weight, Extended Surface



The C-E network

serves the steam and power needs of the free world

The twenty-two organizations listed here... all C-E subsidiaries or licensees... are distributing the fruits of Combustion Engineering development, design and techniques over six continents. Since steam generation is so basic to industrial expansion and improved living standards, Combustion's world-wide activities are contributing importantly

to advancing the economies and living standards of free nations everywhere. In addition to the organizations listed, C-E has sales representatives in some thirty countries outside the U.S.A.

For your steam needs, big or small... at home or abroad... you will find it pays to talk with Combustion, its subsidiaries, licensees, or representatives.

NORTH AMERICA

UNITED STATES

Combustion Engineering, Inc. New York

CANADA

Combustion Engineering-Superheater Ltd. Montreal

MEXICO

Combustion Engineering de Mexico, S.A.
Mexico D.F.

SOUTH AMERICA

ARGENTINA

Mellor-Goodwin S.A.C. Buenos Aires

BRAZIL

Companhia Brasileira de Caldeiras Rio de Janeiro

URUGUAY

Mellor-Goodwin del Uruguay S.R.L. Montevideo

OCEANIA

AUSTRALIA

The Superheater Company (Australia) Pty. Ltd.
Sydney
International Combustion Australia Ltd. Sydney

AFRICA

SOUTH AFRICA

Combustion Engineering Africa (Pty.) Ltd.
Johannesburg

EUROPE

ENGLAND

International Combustion Ltd. London
The Superheater Company Ltd. London

FRANCE

Stein et Roubaix Paris
Compagnie des Surchauffeurs Paris

GERMANY

Kohlenscheidungs-Gesellschaft m.b.H. Stuttgart

HOLLAND

N.V. Koninklijke Maatschappij
"De Schelde" Vlissingen

ITALY

Franco Tosi S.p.A. Legnano

NORWAY

A.S. Kvaerner Brug Oslo

SWEDEN

A.B. Svenska Maskinverken Kallhall

ASIA

INDIA

Textile Machinery Corp., Ltd. W. Bengal

JAPAN

Mitsubishi Yokohama
Mitsubishi Nagasaki
Mitsubishi Kobe

COMBUSTION ENGINEERING

Combustion Engineering Building, 200 Madison Avenue, New York 16, N. Y.

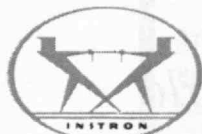


Instron— the tester that stretches dollars



Testing equipment dollars, that is. Here's how: in testing metals, plastics, rubber, textiles, wire, adhesives, and many other materials, the Instron Universal Tester stretches equipment dollars simply because it saves money. And it saves money — and time — and trouble — simply because it *does* more . . . more accurately.

For facts booklet, write:



INSTRON
ENGINEERING CORPORATION

2503 Washington St., Canton, Massachusetts

HAROLD HINDMAN '39 II

GEORGE S. BURR '41 VIII



FREE BOOKLET TELLS WHAT CO₂ CAN DO FOR YOU

agriculture
chemistry
metals
electronics
refrigeration
food
drugs
textiles
rubber

There's practically no end to the important jobs that CO₂—combined with Liquid Carbonic savvy—is doing. Chances are this combination can come up with some surprising answers for you, too. For scores of CO₂ applications, covering all industry, send for LIQUID's new free booklet, "Applications Unlimited." Just use the coupon below.

MAIL THIS COUPON

LIQUID CARBONIC

DIVISION OF GENERAL DYNAMICS CORPORATION

135 South LaSalle St. • Chicago 3, Illinois

Send me my free copy of "Applications Unlimited."

Name _____

Company _____

Position _____

Address _____

City _____ Zone _____ State _____

TREND OF AFFAIRS (Continued from page 44)

large majority of the squad members were interested in other extracurricular activities. The academic pressures, loyalty to the team, and freshman orientation adjustments presented personal decisions necessitating self-discipline and growth of the team members, which was evident during the progress of the season.

The steady and occasional outstanding play of Captain Philip J. Robinson, '61, and Brian E. White, '61, highlighted the individual play of the season's competition. The ability of the team to bounce back after defeats was the chief characteristic of the season's progress. The final game victory over Wesleyan was a fitting climax to a rewarding season both on and off the court.

Golf

The Tech golf team won four and lost six games. They had many individual matches go in their opponents' direction on the 18th hole. Had half of these gone to the Tech players they would have had a winning season. They won over Brown, Tufts, Worcester Polytechnic Institute, and Bowdoin. They lost close matches to Colby, New Hampshire, Harvard, and Wesleyan. Williams and Holy Cross were distinctly superior.

(Concluded on page 48)

SANGAMO ELECTRIC COMPANY offers you a rewarding career

Sangamo Electric Company is one of the leading manufacturers in the fields of electrical measuring and control equipment, electronic components and military products. Sangamo's constant progress reflects the importance that Sangamo personnel place on the development, manufacturing and marketing of high quality products. These include electric meters, power capacitors, time switches, dynamotors, generators, electronic capacitors, recording instruments and military items. Besides the main plant in Springfield, others are situated at Marion, Illinois, Pickens, South Carolina, and in Canada, England and Scotland.

SANGAMO IS A GOOD PLACE TO WORK

Find out about your *opportunity* . . . ask your College Placement Officer, or write directly to Sangamo's Training Director.

These MIT men now hold key positions with Sangamo:

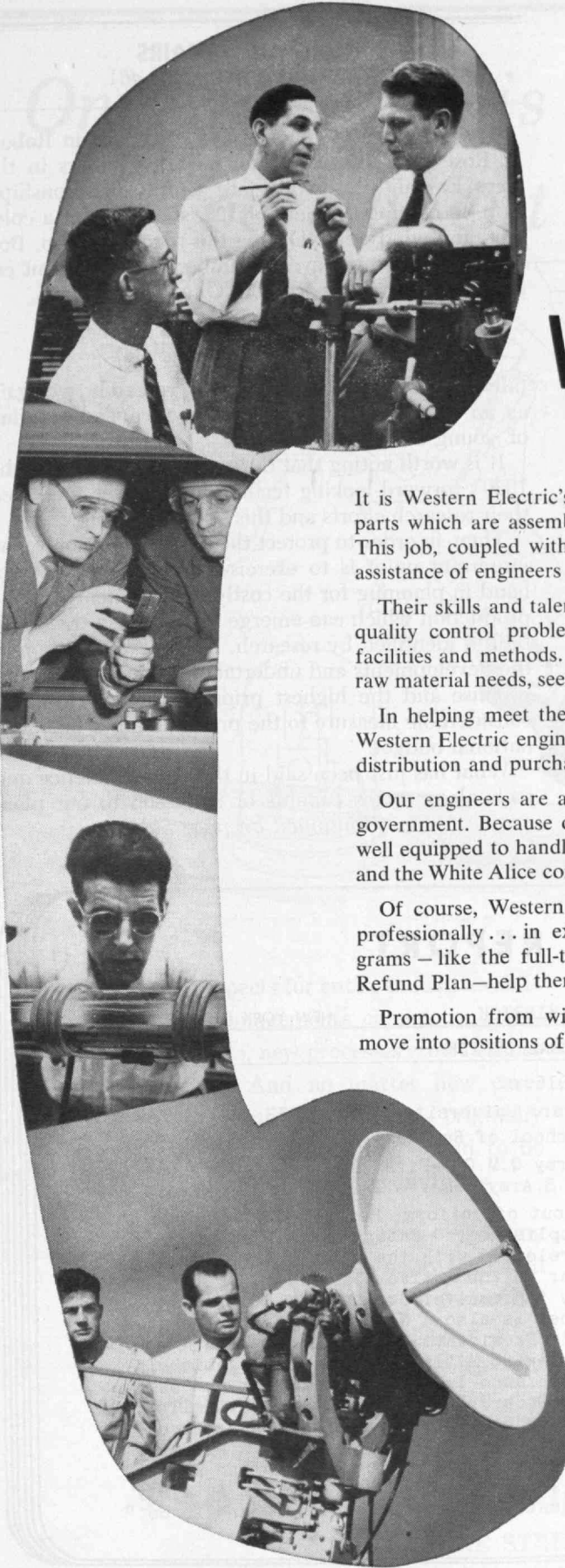
Edward A. Leach, Class of 1927
Vice-President in Charge of Engineering

Ray Ide, Class of 1930
Chief Chemist, Pickens Division

Herbert Johnson, Class of 1943
Chief Engineer

SANGAMO ELECTRIC COMPANY
SPRINGFIELD, ILLINOIS, U.S.A.

It takes all kinds of engineers to do Western Electric's job



It is Western Electric's job in the Bell System to manufacture some 65,000 different parts which are assembled into a vast variety of telephone apparatus and equipment. This job, coupled with our other responsibilities as part of the System, requires the assistance of engineers in every field.

Their skills and talents are needed to develop new manufacturing techniques, solve quality control problems, determine machine and tool requirements, devise testing facilities and methods. They work on new applications for metals and alloys, calculate raw material needs, seek manufacturing cost reductions.

In helping meet the Bell System's need for more and better telephone equipment, Western Electric engineers have assignments in the other areas of our job—installation, distribution and purchasing.

Our engineers are also deeply involved in defense projects entrusted to us by the government. Because of our specialized experience as part of the Bell System we are well equipped to handle the job. Among these projects: the Nike guided missile system and the White Alice communications network in Alaska.

Of course, Western Electric engineers are encouraged and assisted in developing professionally . . . in expanding their technical know-how. Company-sponsored programs — like the full-time Graduate Engineering Training Program and the Tuition Refund Plan—help them along.

Promotion from within—a Western Electric policy—helps many of our engineers move into positions of prime responsibility. Today, 55% of the college graduates in our upper levels of management have engineering degrees. In the next ten years, 7,000 key jobs must be filled by newly promoted people—engineers included.

Western Electric technical fields include mechanical, electrical, chemical and civil engineering, plus the physical sciences. For more information pick up a copy of "Consider a Career at Western Electric" from your Placement Officer. Or write College Relations, Room 1111C, Western Electric Company, 195 Broadway, New York 7, N. Y. And sign up for a Western Electric interview when the Bell System Interviewing Team visits your campus.

Western Electric

MANUFACTURING AND SUPPLY



UNIT OF THE BELL SYSTEM

Principal manufacturing locations at Chicago, Ill.; Kearny, N. J.; Baltimore, Md.; Indianapolis, Ind.; Allentown and Laureldale, Pa.; Burlington, Greensboro and Winston-Salem, N. C.; Buffalo, N. Y.; North Andover, Mass.; Lincoln and Omaha, Neb.; Kansas City, Mo.; Columbus, Ohio; Oklahoma City, Okla., and Teletype Corporation, Chicago 14, Ill. and Little Rock, Ark. Also Western Electric Distribution Centers in 32 cities and Installation headquarters in 16 cities. General headquarters: 195 Broadway, New York 7, N. Y.

**Random Vibration by
Stephen H. Crandall**

A set of notes written especially for engineers who are already familiar with classical vibration theory and who need an introduction to the random vibration problem which has become so important in recent years in the design and testing of missiles, jet aircraft, and other vehicles subject to random loadings. \$10.00

**The Inflationary Spiral: The
Experience in China 1939-1950
by Chang Kia-NGau**

"Plainly Mr. Chang has written a book that ought to find its way into the hands of legislators and administration officials. . . . Certainly there is meat to be found for any American who is interested in why his own dollars buy less and less."—*The Wall Street Journal* \$10.00

**Soviet Education in Science and
Technology by Alexander Korol**

A description and evaluation of the Soviet educational system. The author's findings are directly related to current problems of American education and raise some important questions about American educational aims. \$8.50

Order from

The Technology Press
Cambridge 39, Mass.

TREND OF AFFAIRS
(Concluded from page 46)

The bright spot of the season was Captain Robert L. Rosenfeld, '59, who won medalist honors in the New England Intercollegiate Golf Championships. Bob, in beating the field of 126, shot a 73 on a cold, wet, and windy day. During the regular season, Bob won decisions over every Number One opponent except the Holy Cross Number One man.

U. S. PROGRESS
(Continued from page 34)

tally, by the support of basic research we gain as an important by-product the advanced training of young scientists.

It is worth noting that during the hard times of the 1930's forward-looking technical industries increased their research efforts and this policy paid off.

Then, in order to protect the national economy, the important point is to exercise extreme care beforehand in planning for the costly development and the production which can emerge from among the possibilities identified by research. By careful selection of the developments and undertakings which have most promise and the highest priority, we contribute in considerable measure to the protection of a balanced national budget.

What has just been said in the area of science and technology seems capable of extension to our plan-
(Continued on page 50)

SPECIAL REPORT



Mr. HERBERT V. KIBRICK NEW YORK LIFE AGENT
at BOSTON GENERAL OFFICE

BORN: July 8, 1915.

EDUCATION: Harvard University, B.S., 1938; Harvard Graduate School of Business Administration, 1943.

MILITARY: U.S. Army Q.M.C.—First Lt. Sept. '43—June '46—U.S. Army Reserve T.C. (Active)—Major.

REMARKS: In or out of uniform, Herbert Kibrick is a man of many accomplishments. Entering the Army as a Private, he was released with the rank of Lieutenant and is now a Major in the Active Reserve. His record as

a New York Life representative is equally impressive. Joining the Company on August 17, 1938, Herb Kibrick—whose father is also a New York Life representative—is today a member of New York Life's Presidents Council and a 1958 Qualifying and Life member of the industry-wide Million Dollar Round Table. In addition, his intense interest in life insurance led him to study for and earn the coveted designation of Chartered Life Underwriter. Herb Kibrick, vitally interested in his community's cultural and educational activities, has served on the staff of Northeastern University's School of Taxation and is a Director of both the Friends of Music, Boston University, and of the New England Alumni Association of Phillips Academy. Popular and personable, Herb Kibrick in every way exemplifies why "The New York Life Agent is a good man to know—and to be."

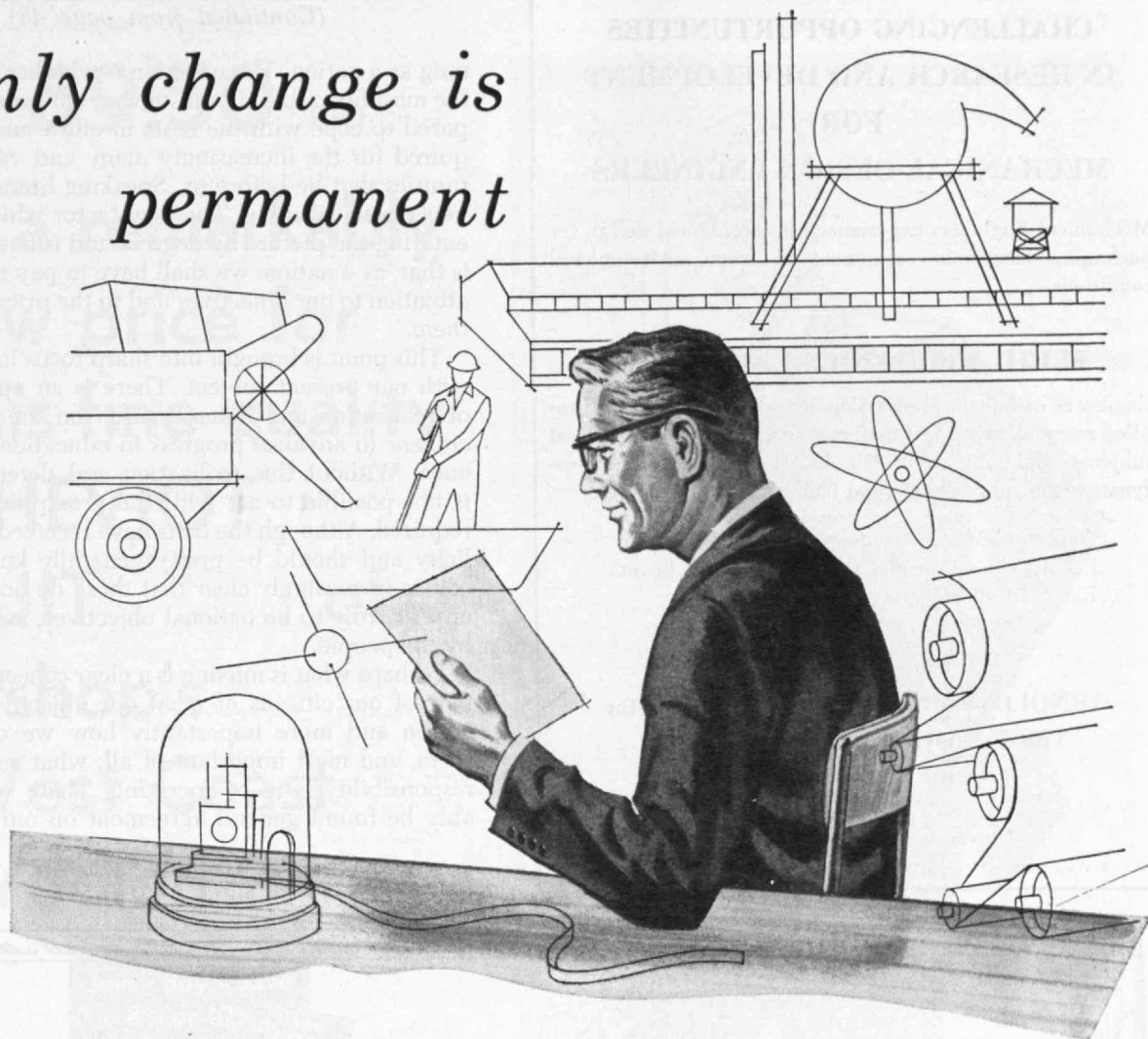
Note

Herb Kibrick is established in a career as a New York Life representative that has provided him with security, substantial income and the deep satisfaction of helping others. If you'd like to know more about such a career for yourself with

one of the world's leading insurance companies, write to the address below.

NEW YORK LIFE INSURANCE CO.
College Relations Dept. J-26
51 Madison Avenue, New York 10, N.Y.

Only change is permanent



Prospects for entire industries shift . . . managements change . . . new products, new processes crowd earlier leaders. And no matter how carefully your investments originally were selected they are bound to be affected by changing conditions.

Furthermore, the task of keeping fully informed of the many facts and conditions affecting your securities becomes ever more complex. That is why the investment management service of our Trust Department can be so important to you.

Today our research organization constantly is gathering important information affecting all securities under our management. Up-to-the minute reports from our security analysts are weighed by our officers and directors . . . working in committee . . . to meet the ever-present need for timely investment decisions.

We invite you to visit or write our Trust Department to learn how our methods of investment management can be of value to you.

The New England Trust Company

135 DEVONSHIRE STREET, BOSTON 7, MASS.

Telephone: HAncock 6-8005

Back Bay Branch: 99 Newbury Street

Member of the
Federal Deposit
Insurance Corporation



Incorporated 1869

**CHALLENGING OPPORTUNITIES
IN RESEARCH AND DEVELOPMENT
FOR
MECHANICAL DESIGN ENGINEERS**

Mechanical Engineers experienced in mechanical design for packaging electronic equipment to meet environmental conditions.

FLUID MECHANICS ENGINEERS

Engineers of advanced standing for work in basic and applied research in field of underwater propulsion and related subjects, including cavitation, hydroelasticity, and hydrodynamic control of submerged bodies.

Opportunities for Graduate Study
Faculty Appointments for Qualified Applicants
Excellent Working and Living Conditions

Send Resume To:

ARNOLD ADDISON, Personnel Director
The Pennsylvania State University
Ordnance Research Laboratory
P. O. Box 30
University Park, Pennsylvania

U. S. PROGRESS

(Continued from page 48)

ning as a nation. The question is whether, even under the most favorable circumstances, our economy is prepared to cope with the costs in effort and money required for the increasingly many and varied opportunities that lie before us. Speaking literally, this has never been possible. The new factor which has been entering the picture by degrees and is now prominent is that, as a nation, we shall have to pay even greater attention to our objectives and to the priorities among them.

This point is brought into sharp focus in connection with our present subject. There is an apparent lack of realization and determination on the part of our citizens to advance progress in education and in science. Without this realization and determination it is not possible to act with the promptness which is required. Although the facts have received much publicity and should be pretty generally known, it becomes increasingly clear that these do not at present appear truly to be national objectives, as understood by the people.

Perhaps what is missing is a clear conception on the part of our citizens of what our objectives are as a nation and more importantly how we can achieve them, and most important of all, what each citizen's responsibility is in co-operating. There would probably be found general agreement on our traditional

(Concluded on page 52)



BROOKS BROTHERS CLOTHING
creates a background for a man

Brooks Brothers clothing offers many advantages. Most of our woollens are woven exclusively for us, assuring individuality and distinctiveness. Tailoring and quality are outstanding. Then there is the exclusive styling that has made the name Brooks synonymous with good taste the world over. We cordially invite you to open a Brooks Brothers charge account and make these advantages yours. Catalogue sent upon request.

"346" Suits, \$85 to \$95 • Our Own Make Suits, from \$105

111 BROADWAY
NEW YORK 6, N. Y.
46 NEWBURY, COR. BERKELEY
BOSTON 16, MASS.
74 EAST MADISON STREET
CHICAGO 2, ILL.
727 WEST SEVENTH ST.
LOS ANGELES 17, CALIF.
165 POST STREET
SAN FRANCISCO 8, CALIF.

ESTABLISHED 1818

Brooks Brothers,
CLOTHING
Mens Furnishings, Hats & Shoes

346 MADISON AVENUE, COR. 44TH ST., NEW YORK 17, N. Y.
BOSTON • CHICAGO • LOS ANGELES • SAN FRANCISCO

69.50 PRT*

is a remarkably
low price for
this fine quality
CHEVIOT
SUIT of
Bishop's
West Coast
Woolen

Join - Buy - Save
8% or 10%

**THE
COOP**

Here is a top-quality fabric that has been superbly finished in a wide choice of patterns. Add to this, expert tailoring and styling . . . then you have this fine cheviot suit of unusual value.

Also available at this same price
is an excellent selection of
worsteds and worsted flannels.

*Patronage Refund Too
3-Month Payment Plan Available

**THE
COOP**

Harvard Square Store



deep water to deep space

This is the span of advanced weapons studies at Chance Vought.

The ocean floor's primeval jungle is being explored by Vought's antisubmarine specialists. They are designing, testing new methods of undersea detection and classification, under the Office of Naval Research and the Bureau of Aeronautics.

Space is the target of Vought's Astronautics effort: research vehicles and manned flight as well. Multistaging... space communications... nuclear and ionic propulsion... celestial navigation—these are areas now being explored.

Scientists and engineers who can contribute to Vought's deep-water or deep-space projects are invited to write directly to A. L. Jarrett, Manager, Advanced Weapons Engineering, Department TR-2.

CHANCE VUGHT AIRCRAFT
INCORPORATED - DALLAS, TEXAS

U. S. PROGRESS (Concluded from page 50)

objective of peace and prosperity—"the pursuit of happiness." However, we do not seem to understand that it will be impossible to maintain our own peace and prosperity unless we do and do promptly the things necessary to compete in a modern world. What is meant by this? Simply to develop our capabilities, both individually and collectively, to the fullest and then, in order to maintain a sound economy, identify and select the areas of endeavor which should engage our fullest attention in terms of money and effort. In science we should put maximum emphasis upon the relatively modest needs of basic research in order to learn all the possibilities of progress in technology and then choose carefully the fields for development that require large capital sums.

To be sure, a primary responsibility lies with the federal government to take the lead in the solution of these problems, but to provide full solution requires the understanding and the co-operation of all citizens. The responsibility of the federal government then is: (a) to insure that the problem is entirely understood by the people; (b) to provide direct support according to carefully devised plans; (c) to consider seriously ways and means of increasing substantially funds from other sources. The responsibility of the people is first to give these problems their careful attention and, second, to determine, as their government has to do, the degree to which they can contribute by thought, action, and money to our national goals as well as to the satisfaction of their personal needs and desires. In other words, each citizen should be fully and continuously aware of his active responsibilities to the nation and to its primary goals, in time of peace as well as war, and be prepared to make the necessary sacrifices to achieve them.

Whether our objectives as a nation are to deter our enemies, to achieve and maintain world leadership, to extend a helping hand to underdeveloped nations, or merely to maintain our peace and prosperity at home, the first essential is a real determination to achieve better education, better science and technology and, above all, the development of quality—quality in training and quality in performance. Unless we can succeed in accomplishing these things, we can maintain neither our national objectives nor the personal objectives of our people.



**NEW
VIBRATING
CAPACITOR**

A vibrating-reed type capacitance modulator for use in measuring currents as low as 10^{-16} amperes.

Long term stability for process control. Drift ± 0.2 millivolts per day, non-cum.

Write for Catalog 523.

**STEVENS
INCORPORATED
ARNOLD**

7 ELKINS STREET
SOUTH BOSTON 27, MASS.



12-1/4



Whoever handles liquid . . .
Handles it better and safer



When he takes advantage of



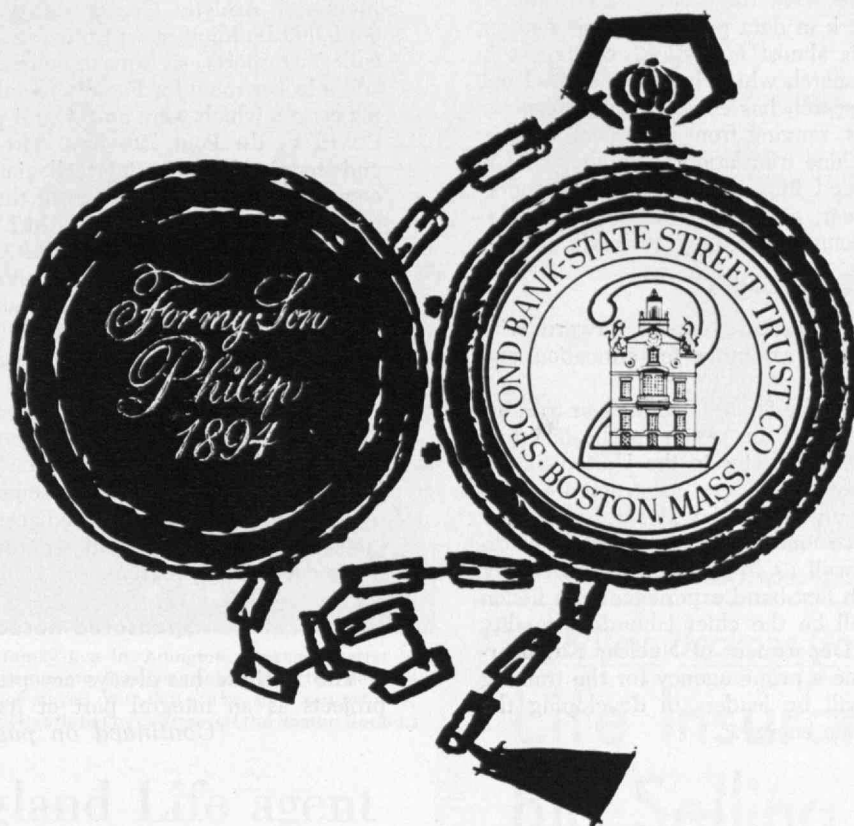
SCULLY Signals, Gauges, Systems.

SCULLY SIGNAL COMPANY

174 Green Street, Melrose 76, Massachusetts

Flow Control

Electronics



IS IT TIME TO CHECK YOUR WILL?

When you are active you may give little thought to your will. But in reality that's just the time when this major personal responsibility should have your careful attention. Perhaps you are interested in a successful business, in real estate or other investments. Rather than place upon your family the burden of administering such matters, would it not be sound judgment, while you are still active, to consult your lawyer about your will and select an experienced executor who will manage your estate?

Second Bank-State Street, as the executor and trustee, would bring to your affairs many ad-

vantages of vital importance to your beneficiaries. Among these are: the experience accumulated through handling many estates; the personal interest and helpful cooperation of a trained staff; financial responsibility, continuing existence, and the unbiased judgment of a Trust Committee composed of senior executives and members of our Board of Directors especially chosen for their knowledge of investment and trust matters.

Many have found our booklet "Will Making — the Chart of an Estate" helpful in planning the disposition of their estates. A copy will be mailed on request, without obligation.

*Whatever your banking or trust needs,
you're welcome at*

**SECOND BANK - STATE STREET
Trust Company**



**PERSONAL TRUST
DEPARTMENT**
53 STATE STREET
Boston, Massachusetts

Member Federal Reserve System • Member Federal Deposit Insurance Corporation

PRESIDENT'S ANNUAL REPORT

(Continued from page 32)

its first year of operation in June. Using its great digital computer (I.B.M. Type 704), the Center has furthered M.I.T.'s pioneering work in data processing, automation, and computation. It is almost impossible to suggest in brief the breadth of research which has been carried out at the Center. This research has covered both the physical and social sciences, ranging from numerical weather predictions to the machine translation of languages. The Center has also provided important educational opportunities: during the year, at least six academic departments have used the computer in their curricula.

New Facilities

During the year, the Institute moved forward with important additions to its resources for education and research.

Of prime importance is the \$3,000,000 nuclear reactor, which "went critical" during the summer. The first privately owned heavy water reactor in the United States, it is one of the most versatile ever constructed for research and teaching purposes and will furnish nuclear particles and radioactive materials for research in medicine and industry, as well as in the basic sciences. By providing students with first-hand experience with fission energy, the reactor will be the chief laboratory facility of the Institute's new Department of Nuclear Engineering. It may well become a prime agency for the training of young men who will be leaders in developing the peacetime uses of atomic energy.

New athletic and recreational facilities will greatly strengthen the Institute's physical education program. Foremost in importance of the year's developments has been the start of construction of the David Flett du Pont Memorial Athletic Center on the West Campus. An \$800,000 building, it will provide added space for intercollegiate sports, six squash courts, facilities for women, and a locker room for Faculty members. Twelve new tennis courts, which were an integral part of the bequest of David F. du Pont '56, have already been completed; and tennis, both in intercollegiate and in intramural competition, has become one of the popular athletic and recreational activities on the M.I.T. campus. With the acquisition and renovation of the Cambridge Armory on Massachusetts Avenue, the Institute has achieved, for the first time in its history, adequate gymnasium space for intramural sports. The old drill floor alone has provided two indoor tennis courts, eight badminton courts, and four volleyball courts.

New quarters for the religious counselors of the Institute were provided with the acquisition of a private dwelling at 317 Memorial Drive. This attractive house, with adequate provision for seminar facilities and located in the dormitory area adjacent to the Chapel, has given a physical unity and strong stimulus to our religious counseling program.

Sponsored Research

The Institute has always accepted sponsored research projects as an integral part of its educational system.
(Continued on page 56)

NEW HORIZONS IN HIGH VOLTAGE CABLES

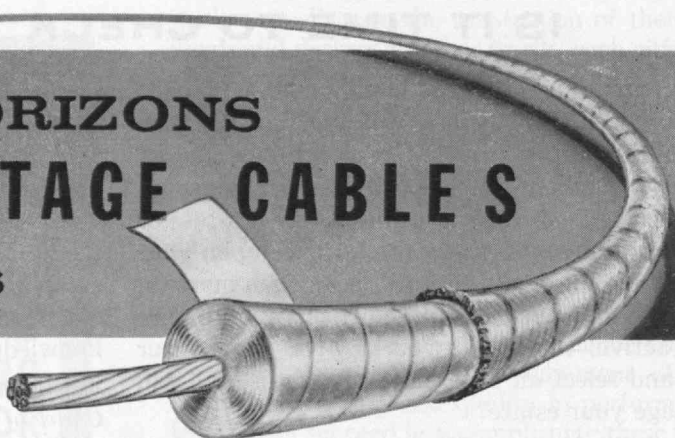
BIW TYPE LSHV 30,000 VOLTS

**SMALL DIAMETER
HIGH CORONA LEVEL
LONG LIFE UNDER HIGH DIELECTRIC STRESS**

BIW TYPE LSHV

Laminated Synthetic High Voltage, small diameter cables are made by multi-wrapping the conductor with synthetic tapes which are coated with insulating fluid. This technique produces cables with high corona levels that have long life under high dielectric stress. These cables are particularly desirable for application at high altitudes. The fluid protects the insulating tapes, excludes the air which would normally pocket between tape layers, and fills cavities around solid or stranded conductors. BIW LSHV cables thus provide the highest levels of corona extinction for small diameter cables.

A few of the present uses are for tube-cap leads, high voltage electron precipitators and for laboratory electrical test equipment. BIW cables find new uses every day. 50,000 volt cables are now in design. Temperature rating up to 125° C.



BIW TYPE	SIZE AWG	O.D. CABLE	VOLTAGE RATING
LSHV-10,000-14	14	.200"	10,000
LSHV-15,000-18	18	.275	15,000
LSHV-17,000-14	14	.300	17,000
LSHV-20,000-10	10	.320	20,000
LSHV-25,000-12	12	.400	25,000
LSHV-30,000-14	14	.550	30,000
LSHV-30,000-10	10	.550	30,000

If your present or planned application calls for rugged, small diameter, high voltage, corona-resistant, noise free cables—let us send information.

BOSTON INSULATED WIRE AND CABLE CO., BOSTON 25, MASS.



WALLACE J. FLYNN and family live in Arlington, Massachusetts. In addition to his business and family life, Flynn has scouted for the Harvard football team on which he once played. With him are his sons and his wife, the former Nancy L. Gillmore. (Reprinted by courtesy of the Boston Herald.)

THE BOSTON HERALD, MONDAY, MAR. 17, 1958

\$456 Billion Beckons Go-Getters

Life Insurance Big Selling Job

(Business is more than the action within executive suites. It is the sum total of hundreds of skills and professions which build and operate the \$440 billion U.S. economy. This is the first of a continuing series of Herald articles on various jobs and the persons behind them. They will appear on successive Mondays.)

By JUAN CAMERON

One day last winter Boston insurance salesman Wallace J. Flynn went to work on a friend who stated flatly he "didn't believe in life insurance." Several meetings later Flynn signed up his disbelieving friend on a \$40,000 life policy with an annual premium of \$1000.

Such efforts of the 33-year-old Flynn — thousands other insurance — born

You can easily get more information by writing to Vice President L. M. Huppeler, 501 Boylston Street, Boston 17, Massachusetts.

NEW ENGLAND

Mutual **LIFE** Insurance Company
BOSTON, MASSACHUSETTS

THE COMPANY THAT FOUNDED MUTUAL LIFE INSURANCE IN AMERICA—1835

New England Life agent subject of feature article

To lead off his fine series of articles on various occupations, Juan Cameron of *The Boston Herald* focused on the accomplishments of Wallace J. Flynn.

Wally's been with New England Life four years — an agent with the Hays Agency of Boston. Previously he had held a good position in another field: merchandising manager of a large textile company. He is a graduate of Harvard (class of '46) and was an outstanding member of three varsity football and baseball teams. His college course was interrupted by service as a Navy torpedo plane pilot.

Why did he choose to go to work for New England Life? "I like the career opportunities of life insurance selling," Wally explains. "I now have control over my own time . . . I'm sure of getting rewards in direct proportion to my efforts . . . and I feel good about the complete cooperation I get from my company."

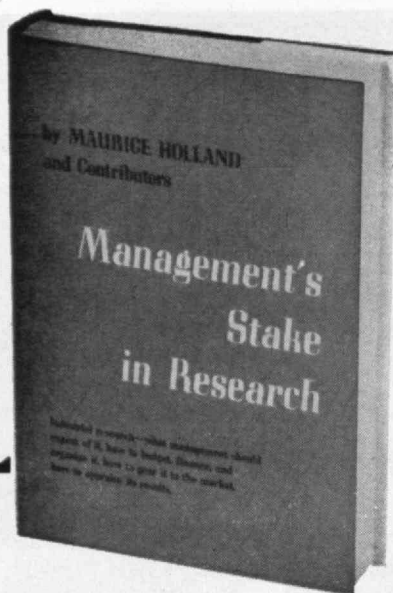
Perhaps a career of this sort appeals to you. There are opportunities at New England Life for other ambitious college men who meet our requirements. You get income while you're learning. You can work anywhere in the U.S.A. Your future is full of substantial rewards.

These MIT College men are New England Life representatives:

Blaylock Atherton, '24, Nashua
Charles E. Crawford, '31, Phoenix

Herbert L. Neitlich, '49, Boston
Arthur C. Kenison, '19, Boston

Ask one of these competent men to tell you about the advantages of insuring in the New England Life.



What research means
to industry today

Management's Stake in Research

By MAURICE HOLLAND
and Contributors

■ A distinguished management consultant has brought together a group of authorities to define the role of research in today's industrial complex: what management should expect of it, how to gear it to marketing problems, how to organize, budget, and finance it, and how to appraise its results. Special attention is given throughout to the needs of small companies and to the role of basic research.

This broad evaluation of research as an essential tool of management will serve and inform executives of industrial companies, marketing specialists, teachers and students of business administration, and research technicians who want to understand the interrelations of their work and overall company policy.

\$3.50 at your bookstore or from

HARPER & BROTHERS, N.Y. 16

Such work, whether in the campus or in the defense laboratories, provides unusual opportunities for both graduate students and Faculty to participate in research at the frontiers of their respective fields. We recognize also that urgent demands will be made upon our resources in times, such as the present, when the safety and strength of the free world depend so greatly on advanced science and technology. Such responsibilities we continue to accept on a selective basis, when the work is in fields in which the Institute has particular competence and which will benefit our educational mission.

A major organizational move during the year, designed to promote this trend, has been the co-operative effort of M.I.T. and the Department of Defense in the formation of Mitre, a new independent, nonprofit corporation to undertake a major advisory role in the systems engineering of the country's air defense. Much of this responsibility, relating to the electronic ground environment of air defense, has previously rested on the Lincoln Laboratory. One objective of this organizational move is to permit the Lincoln Laboratory to devote more of its time to the type of advanced research which fits most naturally and productively into the scheme of an educational institution.

It seems imperative, however, that some form of long-term funding of government-sponsored research programs be adopted with ample warning of termination. The present system of funding on an annual basis is not suitable for colleges and universities where educational programs are of necessity arranged by academic terms. If there is to continue an urgent need for academic contributions to defense research, then surely there is an equally urgent need for review of this problem by the government itself.

The past year, reflecting the state of national need, has witnessed an increase both in cash expenditures and in numbers of staff personnel for our research projects. However, the Acoustics Laboratory and the Dynamic Analysis and Control Laboratory were disbanded during the year as administrative units, although several of their programs of research have been continued in academic department projects.

The Instrumentation Laboratory of the Department of Aeronautical Engineering, moving steadily into the "space age," accelerated its research and development work in guidance and controls systems for satellites and ballistic missiles, including the Navy's "Polaris." An important contribution has been the development of devices for inertial navigation by submarines on extended underwater cruises. Such systems have special importance for operation under the polar ice cap where

(Continued on page 58)

William H. Coburn & Co.

INVESTMENT COUNSEL

68 Devonshire Street

Boston

BOSTON

NEW YORK

PITTSBURGH

PORTLAND, ORE.



LORD ELECTRIC COMPANY

INC.

FOUNDER, F. W. LORD, M.I.T. '93

63 YEARS OF EXPERIENCE IN ELECTRICAL CONSTRUCTION

SPECIALISTS
in
**Pre-Fabricating
PIPING**



ALBERT

PIPE SUPPLY
COMPANY, INC.

STEEL PIPE: Wrought Iron • Steel • Structural • Cast Iron • Copper-Steel • Electric Weld • Seamless • Spiral, Lap & Butt Weld • Shore Dredge • Speed-Lay

CEMENT-ASBESTOS PIPE: For sewerage and water mains where corrosion is a problem.

ALUMINUM PIPE: In standard and light walls. All accessories stocked.

PLASTIC (PVC) PIPE

SPEED-LAY: Complete packaged PIPE SYSTEM for fast-laying, temporary and semi-permanent lines for water, compressed air and other services. Write for catalog.

VALVES, FITTINGS & FLANGES: Tube Turns • Dresser • Victaulic • Cast Iron or Steel • Forged Steel • Special Alloys • Water Main

PILING PIPE: Cast Steel and Iron Points • Plates and Shoes • Cast Steel • Malleable Iron Sleeves

COMPLETE FACILITIES for Bending, Coiling, Beveling, Swedging, Flanging, Grooving, Welding, Cutting to Sketch, and Threading to most rigid requirements. Bitumastic or Cement lining — Testing — all to Standard specifications.

S.G. ALBERT '29 • A.E. ALBERT '56

103-1 VARICK AVE., BROOKLYN 37, N. Y.

Tel.: HYacinth 7-4900



AT YOUR SERVICE



**SPECIALIZED ENGINEERING
SPECIALIZED EXPERIENCE
SPECIALIZED MACHINERY**

FOR

**TWISTING • FORMING
STRANDING • BUNCHING
COTTON • JUTE • MANILA
SISAL • NYLON • DACRON
ORLON • SARAN • PAPER
POLYETHYLENE • GLASS**

**TEXTILE • WIRE • CORDAGE
and OTHER INDUSTRIES**

**HASKELL-DAWES
MACHINE CO., INC.**

2231 E. Ontario Street
Philadelphia 34, Pa.

EDWARD R. MARDEN '41 Pres.

Builders

Engineers

Designers

EDWARD R. **M**ARDEN CORP.

233 Harvard Street — Brookline 46 — Massachusetts

FLETCHER **g** granite
r standardized curb
a dimension m sorry
n broke ashlar
i bridge p er facing
t bound pos s
e thin v neers

Quick Delivery

H. E. FLETCHER CO.

WEST CHELMSFORD, MASSACHUSETTS

LOWELL—ALPINE 1-4031

114 EAST 40TH STREET, NEW YORK 16, N. Y.

OXford 7-4131

PRESIDENT'S ANNUAL REPORT

(Continued from page 56)

magnetic readings are extremely ineffective. Under the leadership of Professor Charles S. Draper, '26, Director of the Laboratory, a major and vigorous basic research program is being undertaken on the future needs of astronautical navigation.

At the Lincoln Laboratory, the year was marked by significant new advances in fundamental research and by substantial progress in the development of the SAGE [Semi-Automatic Ground Environment] System and in other extensions of air defense technology. Existence of two kinds of excitations in germanium have been accurately determined for the first time, using infrared measuring techniques and powerful magnetic fields. Such information may well serve to open up a new solid state spectroscopy.

The first full sector of the SAGE System for air defense of the continental United States went into operation in June, 1958, for the improved protection of the New York-Philadelphia area. By far the largest information processing and control system ever attempted, SAGE utilizes a network of large digital computers teamed with skilled operators to sift out potentially hostile aircraft from tens of thousands of daily routine flights and to direct interceptors and missiles against the enemy. Initially proposed by Lincoln in 1953 on the basis of previous studies at M.I.T., the development of this system has been a major activity of the Laboratory in the intervening years.

This is but a sampling of the many developments coming out of our large industrial and government-sponsored research laboratories.

A Statistical Abstract

In 1957-1958 the student body numbered 6,179 as compared with 6,000 in 1956-1957. We estimate that enrollment this fall will be about 6,200. Veterans numbered about 6 per cent of the total enrollment as compared with 8 per cent the year before. In 1957-1958, 21 per cent of our students were married, an increase of 3 per cent over the previous year. One hundred and twenty-two women were enrolled, 59 of whom were graduate students.

Enrollment in the Graduate School was 2,515. There were 140 officers from the United States armed services enrolled for advanced degrees.

Students enrolled at M.I.T. during 1957-1958 held degrees from 484 other colleges and universities, 297 American and 187 foreign. Total foreign student population was 732, representing about 12 per cent of the total student body. These were citizens from 68 different countries.

Student Aid

Total financial assistance given to M.I.T. students last year amounted to slightly more than \$2,400,000, an increase of 15 per cent over the previous year. This increment was due to the cumulative effect of several important factors, including gifts and bequests from Alumni and friends and the use of Institute funds to meet special demands.

Financial assistance to undergraduates totaled nearly \$1,600,000, bettering by some \$200,000 the recorded help for the previous year. Specifically, \$710,530 was granted in scholarships; \$397,087 in loans; and \$482,000 earned in part-time employment around the campus.

(Continued on page 60)



GRAHAM H. BLAKE, an ex-automobile salesman, was only 22 when he joined the Massachusetts Mutual Agency at Barre, Vermont. 1957 sales: \$805,350.



JOSEPH E. ROCK, 24 when he joined our Boston-Robertson Agency was formerly assistant manager for a finance company. 1957 sales: \$1,226,100.



CHARLES E. MITCHELL joined our San Antonio Agency following military service; former grain inspector and accountant. 1957 sales: \$664,113.



PHILIP G. GALLANT, an attorney, practiced international law before becoming a member of our Spokane Agency. 1957 sales: \$910,500.



TREVOR D. WEISS was a successful women's wear merchant before he joined our Chicago-Geist Agency. His 1957 sales: \$958,600.

A new career pays off for these men

These men who joined the Massachusetts Mutual in 1956-1957 proved that life insurance selling can pay off—fast and profitably.

- These five men are typical of the men joining our field force each year—enthusiastic men with varied training and business experience—men who make the most of the outstanding opportunities and facilities which Massachusetts Mutual offers.

And they've only started! Ahead are years of interest and challenge—and high profits, in

terms of both personal satisfaction and in top earning power, well above that of the average businessman. For instance, the 1957 average income of the 615 men with our company five years or more was \$12,488, with one in six earning over \$20,000. And our 100 top men are now averaging \$29,712.

Does your present position offer comparable opportunity? Maybe you too should investigate the potential of life insurance salesmanship with our company—one of the oldest and strongest in the country.

Write TODAY for a free copy of "A Selling Career."

Massachusetts Mutual
LIFE INSURANCE COMPANY

ORGANIZED 1851 SPRINGFIELD, MASSACHUSETTS

RELAXED

EXECUTIVE

knows that all will go well at the plant because electrical construction and maintenance have been handled by

A. J. WOLFE COMPANY

2 Harris Avenue, Jamaica Plain,
(Boston) 30, Massachusetts

Call JAMAica 4-1222 . . . Our 35th Year



Because they're no ordinary motors—stators, rotors, windings, electrical varnishes, and bearings used are designed and selected to give you long, trouble-free service under the toughest conditions. Yet, BROOK MOTORS cost no more than ordinary motors—usually cost less! No wonder BROOK MOTORS are praised so highly throughout industry. NEMA Rerate (Open Drip Proof Shown) and Standard Frame Motors, 1 to 600 horsepower, available from warehouse stocks in principal cities. Send for the cost-cutting facts today!

world's most respected motor

BROOK MOTOR CORPORATION

3553 W. PETERSON AVE., CHICAGO 45, ILLINOIS

PETER L. LOEWE '31, Vice President

In Canada: BROOK ELECTRIC MOTORS OF CANADA LTD.
250 University Avenue, Toronto, Ontario



PRESIDENT'S ANNUAL REPORT

(Continued from page 58)

At the same time, financial support to our graduate students showed only a slight increase over the record amount given in 1956-1957. In all, the Institute awarded 206 fellowships totaling \$385,988 and 93 scholarships valued at \$126,987. Loan funds assisted 203 students to its amount of \$113,112. Including staff awards for teaching and research, grants last year totaled \$813,839.

It is gratifying to note that at the close of the fiscal year (June 30, 1958) the capital of the undergraduate scholarship funds totaled \$5,425,000, an increase of almost \$400,000 or 8 per cent over a year ago. This growth resulted from some 20 bequests and gifts including new capital funds from Evert W. Freeman, '20, Humphrey M. Haley, '04, Bancroft Hill, '11, William W. Stevens, '98, Archer E. Wheeler, '95, George H. Rand, and Gustaf R. Lindberg. Additional gifts to previously established permanent funds were made by Paul W. Litchfield, '96, and John J. Wilson, '29.

During the past decade, the total of our endowment for scholarships has doubled and so has apparently kept pace with changes in tuition. But because of increases in the size of the undergraduate body, the incremental gain in both capital and income has not kept up with demands for assistance. At the present time we are assisting through scholarship aid only 22 per cent of our undergraduates, a percentage relatively low compared to other ranking educational institutions. Our need for augmented scholarship endowment funds is urgent.

The concern for scholarship aid should not overshadow the substantial help made available by our loan fund program, which is one of the most successful and probably the largest administered by any educational institution. Each year, increasing demands are made upon our loan resources. Last year, for the first time in nearly

(Concluded on page 62)

MUSICAL GIFTS for M.I.T. MEN and Their Families

Imported Swiss Movement Plays:
Sons of M.I.T.



with College Seal and Song

- ☐ Cigarette Box \$ 9.95
 - ☐ Humidor-Pipe Rack 14.95
 - ☐ Table Lighter 14.95
 - ☐ Ash Tray (song only) 5.95
- (We pay all shipping charges)

Name

Address

City State

MUSICAL CREATIONS, INC.

18 Exchange St.
Pawtucket, R. I.

Transistor Engineer Wanted, To Head Laboratory, Italy

Olivetti (Italy) has established a subsidiary in Milan for the production of silicon and germanium transistors and diodes.

It is now looking for the right person to head the existing development laboratory.

These are the requirements: (1) At least 5 years experience in transistor development (2) Degree of Master of Science in Physics (3) Willingness to move to Italy and learn Italian.

It would be desirable if you were familiar with present applications and future potentialities of transistors and diodes, in order to contribute actively to the general policy of the new firm. Salary will be commensurate with experience and ability. Transportation and moving expenses will be paid.

Written replies will be sent to all applicants.

Chosen candidates will be invited for a personal interview in New York City, expenses paid.

Please write, enclosing detailed resume, to Project T.D.L., Olivetti, Ivrea, Italy.



HOLMES & NARVER, INC.

ENGINEERS • CONSTRUCTORS

JAMES T. HOLMES
M.I.T. '14

D. LEE NARVER
STANFORD '14

828 S. Figueroa St., Los Angeles 17, California

Telephone MADison 7-4337

SYSKA & HENNESSY, INC.

Engineers

John F. Hennessy '24

John F. Hennessy, Jr. '51



DESIGN • CONSULTATION • REPORTS
POWER PLANT • WASTE DISPOSAL • WATER SYSTEMS
New York City

CHAUNCY HALL SCHOOL

Founded 1828. The School that specializes in the preparation of students for the Massachusetts Institute of Technology.

Ray D. Farnsworth, *Principal* 533 Boylston Street, Boston, Mass.

ALEXANDER KUSKO, INC.

Consulting Engineers

141 Main Street Cambridge 42, Mass.
ELiot 4-4015

Research and Development in

Magnetics
Electric Machinery

Transistor Circuits
Control Systems

A. KUSKO '44
P. N. HELLER '51

J. P. BLAKE, JR. '54
J. A. GAUDET '56

LOCKWOOD GREENE ENGINEERS—ARCHITECTS

Professional Service from Site Selection to Plant Completion

Plant Location Studies

Site Investigations

Complete Design

Supervision of Construction

REPORTS

APPRAISALS

New York

BOSTON, MASS.

316 STUART ST

Spartanburg, S. C.

PRESIDENT'S ANNUAL REPORT

(Concluded from page 60)

30 years of operation, we loaned a total exceeding the half-million dollar mark. Specifically, loans totaling \$510,919 were made to 662 individuals representing 13 per cent of the entire student body.

Administrative changes effective July 1, 1958, will serve to strengthen the program and meet the increasing demands by accelerating the rate of rotation of capital funds and insuring the complete repayment of maximum amount loaned within a 20-year period. At the same time—for the first time in its history—our loan fund becomes available to entering freshmen.

Gifts

Gifts during the past year totaled \$7,732,000, a decrease of \$766,000 from the amount received in 1956-1957. Of this total, gifts for endowment purposes amounted to \$1,138,000, including substantial bequests from the estates of Frank Hanchett and Hazel Hanchett Harvey for the Walter R. Hanchett Fund, and a sum of \$145,000 from Archer E. Wheeler, '95, for a scholarship fund.

The Donner Foundation of Philadelphia generously awarded the Institute a grant of \$500,000 to establish an endowed professorship in natural science. Dr. Claude E. Shannon, '40, of the Departments of Electrical Engineering and Mathematics has been appointed the first holder of the Donner Chair of Science.

By the end of the academic year the Institute completed its intensive drive for funds to increase Faculty salaries. The Sloan Foundation, backed by the generous assistance of Alfred P. Sloan, Jr., '95, had offered a grant of \$1,250,000 towards a \$5,000,000 fund for Faculty salaries, provided the Institute obtain the remaining \$3,750,000 from other sources. A countless number of Alumni and friends of the Institute contributed generously to the fund, enabling us to reach the goal.

Alumni were directly responsible for gifts to the Institute of \$2,452,000 during the past year. Over 13,000 individuals contributed \$445,194 to the Alumni Fund for further designation by its Fund Board.

Corporate support of the Industrial Liaison Program totaled \$1,188,000, as given by 90 different companies. It is very heartening to receive such generous support in spite of the generally unfavorable economic outlook that has prevailed throughout the past few months.

In addition to this condensation of Dr. Stratton's inspiring report, The Review plans to summarize the Institute's financial operations in an early issue.

meissner Engineers

consultants • engineers • constructors

Processing plants. Bulk materials handling and storage. Conveying systems. Ore and minerals processing. Bridge, expressway and interchange design.

JOHN F. MEISSNER ENGINEERS, INC.

300 West Washington Street
Chicago 6, Illinois
ANdover 3-1944

R. C. MEISSNER '43

PROFESSIONAL CARDS

JACKSON & MORELAND, INC. JACKSON & MORELAND INTERNATIONAL, INC. *Engineers and Consultants*

ELECTRICAL—MECHANICAL—STRUCTURAL
DESIGN AND SUPERVISION OF CONSTRUCTION
FOR
UTILITY, INDUSTRIAL AND ATOMIC PROJECTS
SURVEYS—APPRAISALS—REPORTS
MACHINE DESIGN—TECHNICAL PUBLICATIONS

BOSTON

NEW YORK

EADIE, FREUND & CAMPBELL CONSULTING ENGINEERS

500 FIFTH AVENUE

NEW YORK 36, N. Y.

*Mechanical — Electrical — Sanitary
Air Conditioning — Power — Process Layouts*
James K. Campbell '11

METCALF & EDDY *Engineers*

Water, Sewage, Drainage, Refuse and
Industrial Wastes Problems
Airports, Laboratory, Valuations
Statler Building, Boston 16. Mass.

THE KULJIAN CORPORATION *Consultants • Engineers • Constructors*

UTILITY • INDUSTRIAL • CHEMICAL
Power Plants (Steam, Hydro, Diesel), Textile Plants,
Water & Sewage Works, Oil Refineries, Pipe Lines,
Army & Navy Installations, Air Fields, Hangars

H. A. Kuljian '19

A. H. Kuljian '48

1200 NO. BROAD ST., PHILADELPHIA 21, PA.

FABRIC RESEARCH LABORATORIES, INC.

*Research, Development, and Consultation
In the Fields of Fibrous, Organic, and Related Materials*

1000 Providence Highway Dedham, Mass.
(At Route 128 and U.S. 1 Interchange)

W. J. HAMBURGER, '21

K. R. Fox, '40

E. R. KASWELL, '39

GILBERT ASSOCIATES, INC.

ENGINEERS AND CONSULTANTS

Malcolm G. Davis '25, *Vice President*
Allen W. Reid '12 E. C. Edgar '35

Steam, Hydro, Diesel, Nuclear Power Plants; Industrial
Structures; Plant Safety, Utility Rates, Valuations, Reports;
Purchasing; Chemical Laboratory

New York • READING, PA. • Washington

LAUREN B. HITCHCOCK ASSOCIATES *Chemical Engineers*

Industrial Research & Development
Technical & Economic Evaluations
Acquisitions of Processes and Plants

Commercial Chemical Development—Air Pollution Control

Lauren B. Hitchcock '20 Technical Advisor, John H. Schaefer '26
60 East 42nd Street New York 17, N. Y.

FAY, SPOFFORD & THORNDIKE, INC. *Engineers*

Airports, Bridges, Express Highways
Water Supply, Sewerage and Drainage Systems
Port and Terminal Works
Industrial Plants Incinerators
Designs Investigations
Supervision of Construction
Boston, Massachusetts

CLEVERDON, VARNEY & PIKE

Consulting Engineers

HERBERT S. CLEVERDON '10
JOHN A. DOW '23

WALDO F. PIKE '15
HAROLD E. PROCTOR '17

Structural Designs Foundations
Heating, Ventilating, Electric and Plumbing De-
signs, Industrial Buildings, Reports, Investigations
120 TREMONT STREET BOSTON 8, MASS.

MAURICE A. REIDY

Consulting Engineer

BRIDGES BUILDINGS
STRUCTURAL DESIGNS FOUNDATIONS
CONSTRUCTION CONSULTANT AND ARCHITECTURAL ENGINEER

Estimates and Appraisals

101 TREMONT STREET

BOSTON, MASS.

CHARLES NELSON DEBES AND ASSOCIATES

ENGINEERS AND ARCHITECTS

Structural, Electrical, Mechanical, Acoustical
Industrial, Commercial and Municipal Projects

915 EAST STATE ST.

ROCKFORD, ILL.

C. N. DEBES '35

MORAN, PROCTOR, MUESER & RUTLEDGE

CONSULTING ENGINEERS

Foundations for Buildings, Bridges and Dams;
Tunnels, Bulkheads, Marine Structures, Soil Studies and
Tests; Reports, Design and Supervision

WILLIAM H. MUESER '22

PHILIP C. RUTLEDGE '33

415 Madison Ave., New York 17, N. Y.

BREWER ENGINEERING LABORATORIES

Consulting Engineers

*Electric Strain Gage Testing • Stress Analysis
Strain Gage Amplifiers • Strain Gage Switches
High Temperature Strain Gages*

MARION, MASS.

TEL. 103

C. A. Brewer '38

S. P. Cammack '57

CAPITOL ENGINEERING CORPORATION CONSULTING ENGINEERS

DILLSBURG, PENNSYLVANIA

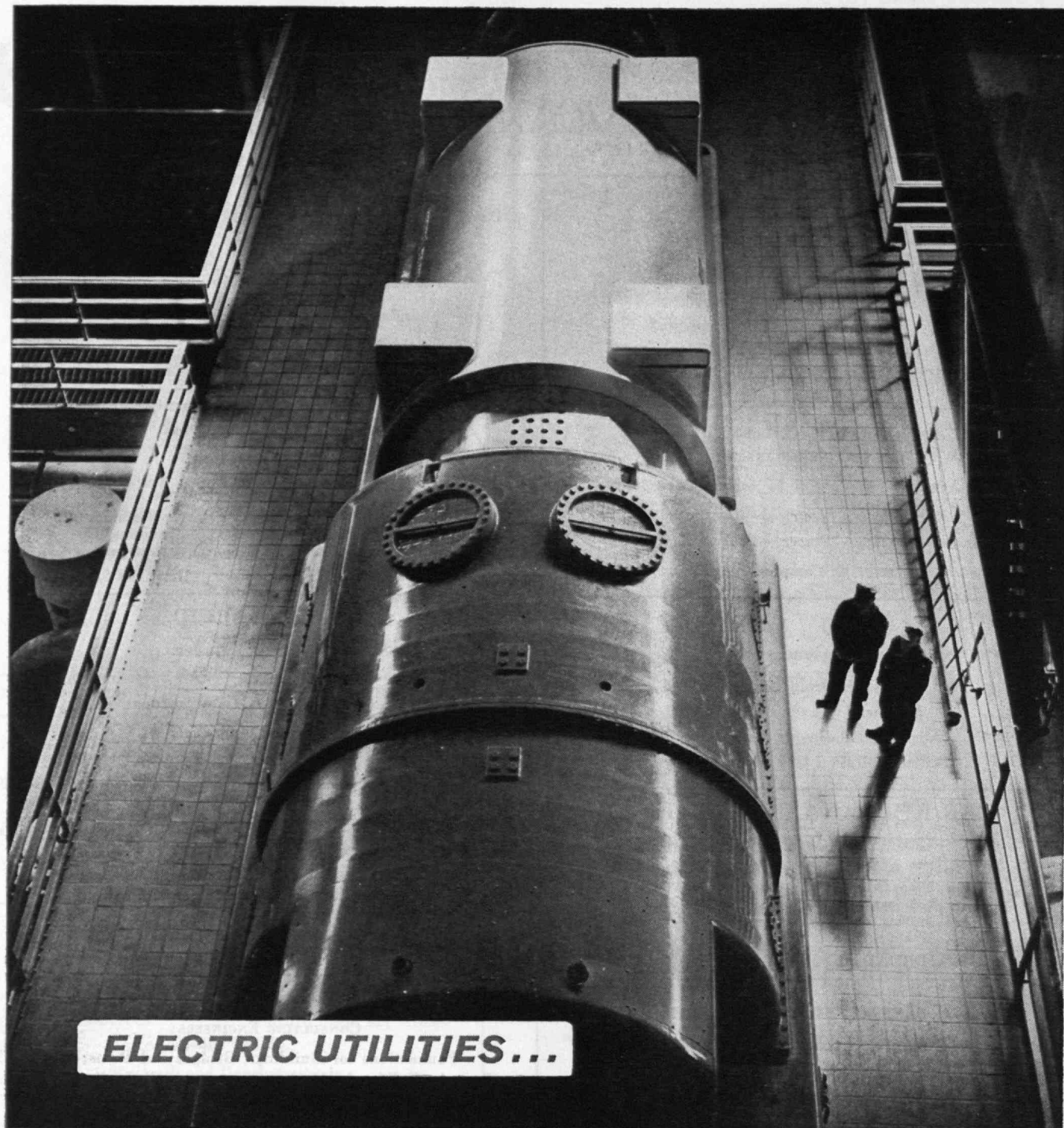
Highways Airports Reports
Surveys
Water Supply Design
Sewage Treatment Construction Supervision
Bridges Soil Testing

Branch Offices

Rochester, N. Y.

Saigon, Vietnam

Robert E. Smith '41, Vice President



ELECTRIC UTILITIES...

Where the Engineer Designs His Own Career

Here's an industry that started big after the war . . . surged ahead in every direction . . . keeps on growing today when others are tapering off . . . and still has its biggest years ahead. The electric utilities business is basically an engineering business. Many of its top executives come from engineering ranks; from systems planning, design, operations, research, or sales; and with backgrounds ranging from electronics and nucleonics to older branches of scientific learning. If you want a career in an *expanding* industry that is based on engineering look to our electric public utilities. We know you'll like working with them. We have been doing it for many years in supplying this great industry with Kerite quality insulated wire and cable. See your placement officer, or write us at 30 Church Street, New York 7, N. Y.



KERITE CABLE

it's the KERITE that makes the difference



ALUMNI AND OFFICERS IN THE NEWS

Celebrations . . .

Among the Alumni to whom birthday congratulations are appropriate during October and November are NATHANIEL A. SPARHAWK '87, who became 95 on October 4, and WILLIAM F. JORDAN '86, who celebrates his 95th birthday on November 1; 3 who mark their 90th birthday; 19 their 85th; and 10 their 80th, as listed below with dates of birth:

1868—HORACE L. BRAND '91 on October 6; WILLIAM R. COPELAND '93 on October 23; and WILLIAM P. FLINT '90 on November 12.

October, 1873—MRS. WILLIAM A. HUTCHESON '03 on the 2d; PEDRO URQUIZA Y BEA '96 on the 14th; JUDSON C. DICKERMAN '95 on the 15th; ANDREW D. FULLER '95 on the 16th; PAUL B. WESSON '98 on the 17th; HALBERT G. ROBINSON '95 on the 18th; LAMONT RICH '98 on the 20th; WILLIAM D. COOLIDGE '96 on the 23d; LINCOLN CROCKER '97 on the 23d; MISS MARGARET LONG '00 on the 28th; and ALPHEUS G. WOODMAN '97 on the 30th.

November, 1873—CHARLES P. MULHERIN '03 on the 7th; EDWARD B. MAY '95 on the 9th; CHARLES E. STAMP '96 on the 12th; WALTER W. WELLS '99 on the 15th; MISS EUGENIA B. FROTHINGHAM '99 and FREDERICK T. RUNDLET '96 on the 17th; PERCY M. SMITH '97 on the 20th; and EDWARD L. CADIEU '96 on the 23d.

October, 1878—HARRY E. DART '01 on the 24th and JOHN T. SCULLY '01 on the 26th.

November, 1878—MISS JULIA PULSIFER '03 and S. WINTHROP ST. CLAIR '01 on the 1st; RAYMOND J. MAYO '02 on the 4th; ROLAND E. TITCOMB '02 on the 14th; EDWARD SEAVER '01 on the 18th; CLYDE MACCORNACK '03 on the 19th; ROYAL L. WALES '02 on the 24th; and VICTOR H. PAQUET '05 on the 27th.

With these 34, the rolls of the Alumni Association will include a total of 77 living nonagenarians and, in addition, 739 octogenarians.

Publications . . .

Adventures in the World of Science by CHARLES G. ABBOT '94 is the autobiographical story of Dr. Abbot's experiences during 60 years of association with the Smithsonian Institution. (Washington, D.C.: Public Affairs Press, 1958, 150 pages, \$3.50.)

GORDON M. FAIR '16 and John C. Geyer have written *Elements of Water Supply and Waste-Water Disposal*, a text emphasizing scientific principles on which water supply and waste-water disposal are based. (New York: John Wiley and Sons, Inc., 1958, 615 pages, \$8.96.)

FRANCIS W. SEARS '20 has recently authored *Mechanics, Wave Motion, and Heat*. (Reading, Mass.: Addison-Wesley Publishing Company, 1958, 677 pages, \$9.50.)

The Properties of Gases and Liquids, discussing their estimation and correlation, was written jointly by THOMAS K. SHERWOOD '24 and ROBERT C. REID '54. (New York: McGraw-Hill Book Company, Inc., 1958, 498 pages, \$10.00.)

Recent Advances in the Engineering Sciences, Their Impact on Engineering Education, contains sections on "Automation and Automatic Control" by GORDON S. BROWN '31 and JOHN G. TRUXAL '47 and "Computer Development and Applications" by SAMUEL N. ALEXANDER '35 and J. P. Nash. (New York: McGraw-Hill Book Company, Inc., 1958, 257 pages.)

ALI B. CAMEL '46 is coauthor with Burgess H. Jennings of *Gas Dynamics*, a textbook and reference volume presenting the theory and concepts underlying compressible-fluid flow and combustion. (New York: McGraw-Hill Book Company, Inc., 1958, 428 pages, \$11.00.)

In his revision of William H. Timbie's *Basic Electricity for Communications*, FRANCIS J. RICKER '48 has extended the content to such areas as industrial electronics and instrumentation. (New York: John Wiley's Sons, Inc., 1958, 538 pages, \$6.25.)

ROBERT W. DICKINSON '53 is coeditor with Chauncey Starr of *Sodium Graphite Reactors*, one of the 13-volume set presented to the United Nations by the United States during the Second International Conference on Peaceful Uses of Atomic Energy in Geneva, Switzerland. (Reading, Mass.: Addison-Wesley Publishing Company, 1958, \$6.50.)

Foundations of Information Theory, one of the publisher's series on electrical and electronic engineering, is by AMIEL FEINSTEIN '54. (New York: McGraw-Hill Book Company, Inc., 1958, 137 pages, \$6.00.)

One of the four contributors to *Science and the Creative Spirit* is KARL W. DEUTSCH, Professor of Humanities. His article is entitled "Scientific and Humanistic Knowledge in the Growth of Civilization," and includes discussion of the fields of industry, politics, technology, and the arts. (Toronto, Canada: University of Toronto Press, 1958, 193 pages, \$4.50.)

Elevations . . .

In addition to the 27 Alumni recorded on page 20, others have advanced as follows:

HAROLD F. DODGE '16 as professor of applied and mathematical statistics, Rutgers University . . . LOUIS J. GRAYSON '19 as treasurer, National Association of Life Underwriters . . . JAMES HARROP '20 as assistant manager, Baytown Refinery, and RALPH G. SHARPLESS '40 as a senior engineer, Technical Division, Humble Oil and Refining Company;

RONALD G. MACDONALD '22 as executive secretary-treasurer, Technical Association of the Pulp and Paper Industry . . . JOHN F. HENNESSY '24 as a trustee, New York Savings Bank . . . ALLEN L. COBB '26 as director of industrial safety, Kodak Park Works, and ANTHONY FROTHINGHAM '44 as European area manager, International Division, Eastman Kodak Company;

RUSSELL P. WESTERHOFF '27 as a director, National Society of Professional Engineers . . . FRED N. DICKERMAN '30 as assistant

chief engineer, Georgia Division, Lockheed Aircraft Corporation... WILLIAM E. CULLINAN, JR., '30 as head, Civil Aeronautics Administration, Portland, Maine;

ROBERT M. JACOBS '30 as chief structural engineer, Stone and Webster Engineering Corporation . . . RODNEY D. CHIPP '33, H. NORMAN CAPEN '39, and RICHARD H. MYERS '39 as associate laboratory directors, I.T.T. Laboratories Division, International Telephone and Telegraph Corporation;

JOHN R. FARMER '33 as a director, Whitman, Mass., Mutual Federal Savings and Loan Association . . . WALTER J. HARING '33 as director, Maintenance and Mechanical Division, Tishman Realty and Construction Company, Inc. . . HORACE K. MACKECHNIE '33 as technical director, electronics section, Lowell Technological Institute Research Foundation;

GRAYDON L. ABBOTT '34 as assistant chief design engineer and supervising Naval architect, U. S. Naval Shipyard, Long Beach, Calif. . . JOHN F. KEEFE '35 as assistant manager, Passenger Department, New Haven Railroad . . . RANDAL M. ROBERTSON '36 as assistant director for mathematical, physical, and engineering sciences, National Science Foundation . . . WILLIAM P. MCHUGH '37 as superintendent, Middleton Sanatorium, Salem, Mass.;

JOSEPH J. SOUSA '37 as chief electrical engineer, Electric Specialty Company, Stamford, Conn. . . JOHN A. DOREMUS, 4th, '38, as chairman, New York Metropolitan Chapter, Professional Group on Aeronautical and Navigational Electronics . . . FRANK S. GARDNER '38 as project manager, Nuclear Metals, Inc. . . OLIVER J. KANGAS '38 as operations manager, Esso Products Research Division, Esso Research and Engineering Company;

FRANK A. KNIGHT '38 as production manager, Eastern Corporation, Bangor, Maine . . . FRED R. SHELDON '39 as general manager, applications section, Inorganic Chemicals Research and Development Department, Food Machinery and Chemical Corporation . . . DONALD W. WATERMAN '39 as plant security officer, Bridgeport Division, The Singer Manufacturing Company... JOSEPH G. ZETLEN '39 as dean of Civil Engineering, Technion-Israel Institute of Technology, Haifa, Israel;

OLIVER H. FULTON '40 as director of program research, General Dynamics Corporation . . . SCHRADE F. RADTKE '40 as director, joint research program of industry development committees of the American Zinc Institute and the Lead Industries Association... DONALD W. ROSS '40 as secretary, Phoenix of Hartford Insurance Companies . . . DAVID L. SHAPIRO '41 as section head, Advanced Development Engineering Department, Countermeasures Division, Sperry Gyroscope Company;

RALPH B. DE LANO, JR., '41 as a senior engineer and JAMES M. BROWNLOW '44 as a senior ceramist, Research Center, International Business Machines Corporation . . . DONALD C. BERKEY '42 as general manager and NEIL BURGESS, JR., '41 as

manager of commercial engine operations, Jet Engine Department, General Electric Company, Cincinnati;

WALTER D. HOWELL'41 as manager of sales, Pacific Gas and Electric Company . . . NEWMAN M. MARSILIUS, JR.'42 as a trustee, University of Bridgeport . . . MORTIMER P. REED, JR.'42 as publicity manager, United States Gypsum Company . . . ROBERT R. EVERETT'43 and JOHN F. JACOBS '52, respectively, as technical director and associate technical director, Mitre Corporation;

MARJORIE K. SMITH'43 as medical director, Kentucky Crippled Children Commission . . . GEORGE M. BARR'44 as general manager, Skow Moccasins, Inc., Skowhegan, Maine . . . JOHN B. GARDNER '44 as assistant chief engineer, The Kerite Company . . . ALAN R. GRUBER'46 as assistant chief engineer, Marquardt Aircraft Company, Van Nuys, Calif.;

JOHN A. RUSSELL, JR.'46 as chaplain, Yale University . . . BARRETT B. BROWN'47 as technical manager, Phosphorus Division, Hooker Chemical Corporation . . . HAYDEN N. RINGER'47 as a group manager, Government and Industrial Division, Philco Corpo-

ration . . . PAUL P. GIBIAN'48 as vice-president of manufacturing, Milton Roy Company, Philadelphia;

MYRON G. H. LIGDA'48 as a group head, Engineering Division, Stanford Research Institute . . . FRED P. NABER'48 as general manager, Howell Instrument Company, Fort Worth, Texas . . . VAN T. BOUGHTON, JR.'49 as manager, Process Development Department, Dewey and Almy Chemical Division, W. R. Grace and Company . . . JAMES R. COWDERY'49 as vice-president, Processes Research, Inc., Cincinnati and New York City;

JOHN B. DONNER'49 as project manager, Sylvania Electronic Systems' Division, Sylvania Electric Products, Inc. . . . LINDSEY R. PERRY'49 as product manager, CBS-Hytron Division, Columbia Broadcasting System . . . ARTHUR W. WILLIS, JR.'49 as general manager, A. O. Reynolds Company, Lebanon, Ind. . . . LEETE P. DOTY'50 as assistant general manager, Sikorsky Division, United Aircraft Corporation;

GERALD G. LAUBACH'50 as manager of synthetic medicinal products research, Chemical Research and Development De-

partment, Charles Pfizer and Company, Inc. . . . CHARLES J. LUCY'50 as supervisor of applications engineering, Electronic Components Sales Department, Corning Glass Works . . . WILLIAM F. BROWN'51 as manager of manufacturing, Rocky Mountain Region, Continental Oil Company . . . GEORGE S. GATTER'51 as assistant director, City and Regional Planning Division, Wilsey and Ham, Millbrae, Calif.;

RUSSELL W. OSBORN, JR.'51 as chief industrial engineer, Salem Plant, Cannon Electric Company . . . KARL H. EPPLE'53 as director of engineering, Heli-Coil Corporation Division, Topp Industries, Danbury, Conn. . . . ROBERT T. WALLACE'53 as assistant research director, General Research Department, Owens-Illinois Glass Company;

ROBERT L. RHODES'54 as head, Maintenance Division, Northwest Orient Airlines . . . BENNETT N. EPSTEIN'56 as research supervisor, Polychemicals Department, E. I. du Pont de Nemours and Company . . . JOHN ZOTOS'56 as assistant chief, Experimental Foundry Branch, Rodman Laboratory, Watertown Arsenal.

Obituary

WILLIAM H. BUSWELL'86, August 31
JOHN W. KILLINGER'86, May 5
STURGIS G. BATES'89, December 31, 1957
HENRY A. NASH, JR.'90, July 21*
GEORGE A. PACKARD'90, July 18
CHARLES W. SHERMAN'90, January 17*
WILLARD C. TILSON'90, August 18*
THOMAS M. BROOKS'91, no date given*
FRANK W. HOWARD'91, June 10*
WILLIAM H. LAWRENCE'91, June 12*
LOUIS A. SIMON'91, May 11*
GEORGE K. DEARBORN'93, May 12*
GEORGE B. GLIDDEN'93, August 2*
EDMUND I. LEEDS'93, June 1*
ALDEN R. PALMER'93, January 1*
LOUIS A. ABBOT'95, August 10*
SAMUEL P. HUNT'95, August 15*
JOSEPH E. WALWORTH'95, August 29*
MARSHALL O. LEIGHTON'96, August 29*
JOHN A. ROCKWELL'96, July 23*
CHARLES B. BREED'97, August 9*
JOHN S. HUMPHREYS'97, June 30*
J. FRANKLIN McELWAIN'97, July 3*
GEORGE M. WOODMAN'97, June 19*
HERBERT B. NEWTON'98, June 10
ALICE W. TALLENT'98, May 31
LAURENCE A. HAWKINS'99, May 15*
CHARLES B. PAGE'99, February 7*
EDWIN SUTERMEISTER'99, July 30*
JOHN W. BROWN'00, April, 1958*
WILLARD F. JACKSON'00, July 14*
HERBERT O. KEAY'00, May 14*
HARRY F. BENSON'01, June 30*
WILLIAM J. NEWLIN'01, July 24*
RALPH C. ROBINSON'01, June 19*
AARON SCHWARTZ'02, August 7
HOWARD C. TURNER'02, May 21
FREDERIC A. EUSTIS'03, May 21
ALEXANDER HEALY'03, June 12
PHILIP J. KEARNY'03, July 31*
AUGUSTUS S. LEAVITT'03, December 7, 1955
CHARLES B. MOSELEY'03, May 9*
DAVID ELWELL'04, June 8*
THOMAS W. ESTABROOK'05, September 16
ALDEN P. GILSON'05, June 16*
GROSVENOR D. MARCY'05, July 8*
EDWARD F. MOODY'05, September 11
RICHARD V. MCKAY'06, July 25*

SHERLEY P. NEWTON'06, June 21*
JOHN E. TRESNON'07, July 16*
MAURICE L. BULLARD'08, January 28*
STANBURY THOMPSON'08, March 3, 1955
GEORGE A. HAYNES'09, May 11*
BURTON R. KIMBERLEY'09, July 4, 1955*
FRANK D. NEILL'10, May 9*
SAMUEL F. PERKINS'09, October, 1956*
EDWARD T. RICE'09, June 11, 1957*
LOUIS O. FRENCH'10, May 19
FRANK C. HEARD'10, May 1
ROBERT E. ANDERSON'11, April 17*
JOHN R. BOWMAN'11, August 26
JOSEPH F. HARRINGTON'11, June 2*
ARTHUR F. LEARY'11, August 9*
RAYMOND H. LORD'11, July 12*
NATHANIEL S. SEELEY'11, September 13*
JEROME A. APPELQUEST'12, August 8
MERWIN H. WARD'13, July 11, 1957
THOMAS L. CHASE'14, August 11*
JOSEPH H. CURRIER'14, July 19*
PHILIP M. CURRIER'14, June 20, 1955
LESLIE W. SNOW'14, August 15*
GEORGE C. BLOUNT'15, December 1, 1957
RALPH L. FLETCHER'15, August 11*
HOWARD L. KING'15, September 21
WILLIAM J. McDONALD'15, September 19, 1957
JOHN H. McNAMARA'15, April 15, 1957
WARREN AMES'16, September 12
JOHN D. EBERHARDT'16, August 16*
EARL L. HAUMAN'16, August 26
WILLIAM L. OGDEN'16, August 6
EDWARD B. SEBBEN'16, March 21*
WALLACE E. WENTWORTH'16, June 22*
JAMES E. WALLIS, JR.'17, August 4*
EDWARD P. WARNER'17, July 11*
HENRY M. BARBER'18, no date given
EDWIN S. FIELDS, JR.'18, 1950
STANLEY H. FRANKLIN'18, June 16
EDWARD B. MCCARTHY'18, May 26
SAMUEL MANN'18, September 6
RAYMOND P. MILLER'18, August 2
JOSEPH E. ROY'18, July 23
GEORGE G. FLEMING'19, August 31
J. PICKERING PUTNAM'19, July 7*
PAUL F. SWASEY'19, May 12*
WILLIAM F. CLEMENTS'21, May 14*

ROBERT C. DOLLE'21, July 11*
EDGAR S. RUSSELL'21, May 28*
ARNOLD C. VARDON'21, June 15, 1957*
THOMAS N. BERLAGE'22, March 3
WALTER J. CROFT, JR.'22, July 12
W. RAMSEY McIVER'22, November 29, 1949
WALTER A. METCALF'23, July 8*
HARRY J. PALETZ'23, July 3
HARRY PERLSTEIN'23, August 18
ARTHUR I. REYNARD'23, March 25
JAMES C. RUDELL'23, June 13*
RONALD H. WINDE'23, August 28*
THOMAS A. O'BRIEN'24, May, 1958
JOHN A. CHICKERING'25, no date given*
E. BARNES HOPKINS'25, August 18
WILLIAM W. HASTINGS'25, November 6, 1956*
JOHN H. ROUNTREE, JR.'25, July 25
MRS. FREDERICK (MARY RITCHEY) WINSOR, JR.'25, June 7, 1953*
HAROLD S. ROGERS'26, March 17
KENNETH F. BECKLEY'27, May 9*
JAMES R. GLAZEBROOK'28, August 23*
JAMES SAMPSON'28, August 10*
JOHN H. BOOTH, JR.'29, June 18*
JAMES J. HOGAN'29, July 8*
ERNEST KOHLER, JR.'29, June 5
SAMUEL H. WILLIAMS'29, August 2, 1957
BRYANT F. KENNEY'30, July 14
JAMES H. TOAS'30, February 12
ROY W. CHAMBERLAIN'31, June 15*
ALFRED A. KESSLER, JR.'32, November 30, 1956
WILLIAM T. HANLEY'33, March 3
GORDON C. PEARSON'33, July 19*
FREDERICK D. WELLS'33, August 28*
ROBERT J. E. WHITTIER'34, July 1*
WILLIAM M. NELSON'36, July 8
DANIEL A. NORMAN'36, 1957
HENRY F. BAKER'39, July 28
EDMUND C. YURGELUN'39, July 20*
JOHN W. SOUSER'40, July, 1957*
THOMAS W. CLUNE'43, May 2*
WILLIAM J. COCHRAN'43, June 27*
VERL C. ATHEY'48, July 14, 1953
FRANK A. TUDINO'53, August 3
JOHN G. BOLMAN'55, September 9
PHILIP P. KIMBALL'56, August 13*
*Further information in Class Notes

NEWS FROM THE CLUBS AND CLASSES

CLUB NOTES

Atlanta

Members of the Atlanta Alumni Association of the M.I.T. were guests of the Georgia Division of the Lockheed Aircraft Corporation on July 16. After dinner and a short business meeting (15 minutes), the group toured the main manufacturing area and the experimental flight test area of the Marietta, Ga., plant.

Extensive B-47 modification and C-130 production activity was observed. The automatic International Business Machines computing machine facility and the fully automatic I.B.M. instruction guided milling machine were also viewed. This latter guidance system is the result of work pioneered at M.I.T. The group also viewed the latest addition to the Lockheed aircraft family—the turbojet powered JetStar multipurpose small (10 passenger) transport. Finally the hydrostatic test facility was visited where a C-130 fuselage was under repeated pressure and air load test and had already exceeded 17,000 cycles, or the rough equivalent of 50,000 flight hours.

At the informal business meeting, the secretary was also made treasurer; however, it was decided that no funds need be accumulated at present.

There was a discussion by William E. Huger'22 of the need for encouraging qualified students from the Atlanta area to attend M.I.T. and the difficulties of finding such students who are financially able to attend. There was general agreement that this matter needed attention by the local chapter, and Fred N. Dickerman'30, President, indicated that it would be followed up.

Those in attendance were: C. A. Alexander, Jr.'43; R. W. Allen'27; E. E. Blount'28; D. A. Crawford'26; F. N. Dickerman'30; M. A. Garr, Jr.'49; L. Grandgent'11; E. P. Head'37; W. E. Huger'22; N. W. Jahnke'40; C. W. Mills, Jr.'35; M. E. Parker'56; W. M. Postman'39; E. H. Rogers'56; E. E. Sanborn'22; W. T. Shuler'38; L. H. Turner'99; and L. C. Young'36.—WILLIAM T. SHULER'38, *Secretary-Treasurer*, 4423 Mount Paran Parkway, N. W., Atlanta 5, Ga.

Buffalo and Niagara Falls

Our spring meeting was held on Monday, June 16, 1958, at the Saturn Club. A total of 34 members attended the *filet mignon* dinner, which was followed by a talk given by Dr. Raymond Ewell, Vice-chancellor of the University of Buffalo. Last fall Dr. Ewell spent a month in the Soviet Union on an unrestricted visa studying Russia's educational system, their industries and living conditions. He had no difficulty in obtaining firsthand information, and during his visit he held many interviews and took a wide variety of photographs. He was able to plan his own itinerary and to circulate freely among the citizens, observing firsthand their habits and customs which, surprisingly, did not differ

widely from ours. He found the general populace to be congenial, co-operative, and inquisitive about America but definitely of the opinion that their way of life was superior. After the lecture our speaker was kept busy until a late hour answering many questions from a most enthusiastic and interested audience.

A short business meeting was held for the election of four new directors. These are Cutter P. Davis'19 (Trubee Collins Company), Homer Fay'53 (Linde Company), John F. O'Donnell'55 (Du Pont Company) and Thomas Hooker'40 (Hooker Electrochemical Company). Those directors continuing in office are Donato A. Grieco'31, Watt W. Webb'47, Thonet C. Dauphine'35, Robert V. Horrigan'44, Richard K. Koegler'36, Warren H. Miller'45, James B. Neal'15, and Ray S. Hamilton'24.

New officers were elected as follows: James B. Neal, President; Richard K. Koegler, Vice-president; John F. O'Donnell, Secretary-Treasurer.

The meeting was adjourned at 11:30 P.M.—RAY S. HAMILTON'24, *Secretary-Treasurer*, 144 Linden Avenue, Buffalo 16, N. Y.

Central New York

More than 30 of our members and their ladies had a firsthand look into the air defense of the Syracuse area when we were guests of the 107th Fighter—Interceptor Group, New York Air National Guard, on the 30th of April.

Following a buffet at Bob Casey's Inn in De Witt, we were first briefed by Colonel Curtis J. Irwin, Commander of the 107th, in the day room at Hancock Field. We then toured the facilities, which house a large number of F-86 aircraft, a Link trainer, and the personal equipment room, where the survival kits drew the most interest because of the incredible array of items that are packed into them.

We all left the field highly impressed with the preparedness and hospitality of our hosts.

A business meeting was held on May 28 at Bob Casey's Inn for the purpose of electing officers for the 1958–1959 season, and to discuss the scholarship fund for which so many of our members solicited this spring. Outgoing President Dewey Sandell'49 reported that this year's activities swelled the amount designated to our scholarship fund to an unofficial \$2,100; he also presented a detailed plan for the administration of the fund. The plan is to be submitted to Tech for approval.

New officers elected for the 1958–1959 season are: Alden A. (Bud) West 2'44, President; Greg Gebert'50, Vice-president; Paul Ostergaard'49, Secretary-Treasurer.—GREGORY G. GEBERT'50, *former Secretary-Treasurer*, 33 Trelign Drive, North Syracuse 12, N. Y.

Cincinnati

The M.I.T. Club of Cincinnati held its annual reception for students and entering freshmen at the Queen City Club on Thurs-

day, September 4. The freshmen had an opportunity to meet each other and to get answers to their questions about life at M.I.T. The movie *The Social Beaver* was shown.

The entering freshmen who attended were: Dick Howland, Paul Schroeder, Ken Koerber, Barry Franz, Jim Dressler, and Bruce Sherrill.

Upperclassmen were: Bruce Bardes'61; Lynn Rich'61; Jerry Welch'59; Peter Kuempel'59; Earl VanHorn, Jr.'61; Bob Stoeckly'60; Ronald Koettters'60; Albert Dierckes, Jr.'60; and Ken Reinschmidt'60.

The Alumni present were: Sam Crew'34, Charles Axelrod'48, Jack Comer'49, Ed Fox'50, and Jim Stolley'52.—JAMES S. STOLLEY'52, *Secretary*, 11 Beverly Drive, Hamilton, Ohio.

Fairfield County

Fifty-seven members and guests attended the spring dinner meeting of the M.I.T. Club of Fairfield County at the Clam Box in Westport, Conn., on May 21. We were fortunate to have as guest speaker Dr. H. Guyford Stever, Associate Dean of Engineering and Professor of Aeronautical Engineering at the Institute, who spoke on "Missiles and Space Technology."

Starting with a brief review of the historical side of his subject, Dr. Stever pointed out that a high interest in space and space travel is not new, but that it goes way back, long before the time of Jules Verne. What distinguishes the present generation from earlier ones, therefore, is not that it is the first to exhibit such a great interest in this field, but that it has the capability to explore space by other means than by use of the telescope. There then followed a sober and realistic account of our current position in space exploration, some of the serious problems yet to be overcome, and the outlook for the future. Several of the important potential non-military applications and objectives were cited and discussed. Dr. Stever cautioned against programs conceived in panic and designed primarily to accomplish the spectacular. A well thought out, sound, long-range program would, in his opinion, give greater assurance of ultimate success in achieving the desired objectives. We are certain that everyone at the meeting thoroughly enjoyed Dr. Stever's excellent presentation of part of the story behind this exciting and important field.

The business of the meeting was speedily transacted between dinner courses to allow maximum time for Dr. Stever's talk. The principal item of business taken up was the election of new officers. President Bailey Curran'29 called upon Clinton Springer'45 (who took over as chairman of the nominating committee when Clarence Lyon'46, the original appointee, moved to Boston) to present the recommended slate. The following were then elected as the Club's new officers: President, Anthony R. Savina'30 of Stamford; Vice-president, Donald W. Waterman'39 of Easton; Secretary, Elmer W. Crouthers'55 of Stratford; Treasurer, C.

Philip Epifano '39 of Fairfield. Lester Steffens '30 of Darien spoke very briefly in behalf of the M.I.T. Educational Council and stressed the need for more counselors in this area to help guide qualified students to M.I.T.

Among the Alumni present were: H. J. Baker, Jr., '33; R. H. Barlow '53; T. L. Bell, Jr., '44; D. L. Botway '49; A. E. Bowen, Jr., '48; J. R. Braxton '46; S. E. Cotter '24; T. B. Curran '29; R. M. Curtis '42; L. W. Day '27; A. N. Doe '20; R. G. Edmonds '34; C. P. Epifano '39; P. Gadebusch '49; R. D. Glenn '33; D. J. Gluck '56; R. S. Goff '51; A. L. Grout '34; E. W. Harmon '30; V. Kampman '51; H. L. Kopp '48; P. M. Koppel '54; M. Kundrath '31; C. H. Lucke, Jr., '34; C. W. Maschal '22; D. F. McGrath '26; D. N. McNally '54; P. Moller '48; G. C. Mott '37; R. B. Porter '31; E. A. Rosenberg '47; J. A. Sabo '52; A. R. Savina '30; W. J. Schaefer '22; J. B. Scheller '54; P. S. Shelton '18; E. W. Smith, Jr., '42; C. H. Springer '45; L. Steffens '30; R. Swain '33; D. F. Tarinelli '52; H. M. Tepper '52; L. W. Trowbridge '22; J. R. Vyce '52; D. W. Waterman '39; M. L. Waterman '13; R. L. Webb '48; C. A. Wesley '34; J. J. Whiteley '51; R. P. Whorf '47; and E. S. Worden, Jr., '31. Communities represented by the Alumni who attended were: Bridgeport (seven), Danbury (one), Darien (four), Easton (one), Fairfield (six), New Canaan (three), Norwalk and South Norwalk (two), Old Greenwich (two), Ridgefield (three), Riverside (one), Stamford (seven), Stratford (six), Trumbull (one), Westport (six) and Wilton (one).

Any Alumni in the Fairfield County area who are not receiving announcements of the Club's meetings should contact the Secretary. By the time these notes are published, the undersigned will be a past secretary, and Elmer W. Crouthers, 152 Norman Circle, Stratford, Conn., will be functioning as the new club secretary.—ANTHONY R. SAVINA '30, former Secretary, 79 Ledge Lane, Stamford, Conn.

Japan

We were very pleased to have an opportunity for welcoming Mr. and Mrs. H. B. Richmond '14 from our cherished town of Cambridge at a Welcome Dinner Meeting on May 26, 1958. I was very happy to have our senior and young friends join in this meeting.

Attendants were as follows: Mr. T. Arikawa '57, II, Engineer, Hitachi Manufacturing Company; Mr. Y. Chatani '22, XIV, Vice-president, Kishimoto Shoten, Ltd., and Mrs. Chatani; Mr. H. Fujisaki, entering M.I.T. in September, 1958, VI; Mr. T. Furuichi '14, VI, Chairman, Midoriya Electric Company; Mr. H. Ichiura '53, Foreign Student Summer Project, Engineer, Isuzu Motor Company; Dr. S. Ikehara '28, VI, Professor, Tokyo Institute of Technology, and Mrs. Ikehara; Mr. K. Kagami '22, II, Chief Engineer, Mitsubishi Nippon Heavy Industries; Mr. T. Kato '37, XV, Manager, Resources and Facilities (Japan) Company; Mr. K. Kotoda '52, Foreign Student Summer Project; Mr. T. Kuki '29, VI, Director, Ace Company; Dr. K. Minami '31, XVII, Professor, Waseda University, and Mrs. Minami; Mr. M. Miyauchi '29, VI, Business Manager, Toyo Otis Elevator Company; Dr. K. Murakami '29, III, Professor, Nippon University; Mr. S. Muroga '54, VI, Engineer, Electric Telecommunications

Laboratory; Mr. R. Okabe '57, II, Engineer, Hitachi Manufacturing Company; Mr. S. Uchida '27, VI, Engineer, Central Commerce Company; Dr. H. Wada, Engineer, Electro-technical Laboratory of the Japanese Government; Dr. H. Yamashita, Research Fellow VI, Head Professor of Electrical Engineering, Tokyo University; and Mr. E. Zoolalian '56, XV-A, Private, U. S. Army Headquarters Company, U.S.A. Ordnance Depot.

Dr. Issac Koga gave me a message saying his regret for not attending this meeting due to having another meeting this evening of deans of faculty of engineering of different universities. I take this opportunity to congratulate him upon his new appointment as dean of the Faculty of Engineering of Tokyo University from this spring term.

I would like to introduce perhaps our youngest graduate, Mr. Zoolalian, Class of '56, taking service in the U. S. Army, and another young member, Mr. Fujisaki, post-graduate student of Tokyo University who is going to be studying at M.I.T. from this September term.

The guests of honor, Mr. and Mrs. H. B. Richmond, are well known among M.I.T. Alumni members. I may mention here only a portion of the remarkable record of Mr. Richmond. He was graduated in 1914, Course VI Electrical Engineering, has long devoted much of his time, energy, and enthusiasm toward M.I.T. and the Alumni Association.

Mr. Richmond was president of the Alumni Association in 1937-1938, has been on numerous important committees for both the Association and the Institute. I was told Mr. Richmond has had a very significant role in the development of the Alumni magazine, The Technology Review, and the establishment nearly 20 years ago of the M.I.T. annual Alumni Fund. Mr. Richmond is currently a life member of the M.I.T. Corporation.

All of us know that Mr. Richmond was chairman of the board of directors of General Radio Company, which he brought up to such a magnitude as a reputable manufacturer of precision electrical instruments supplying to most countries in the world. In our country the Midoriya Denki Kaisha is the sales agent and is represented by Mr. Furuichi. Taking this opportunity, we wish to tender our thanks to Mr. Richmond for his kindness in having allowed our friends and students to visit his works.

I was privileged to be acquainted with Mr. Richmond when I was at M.I.T. in 1953 through the kind introduction of Dean Harold L. Hazen '24 for making arrangements for shipment of the rare series of *Proceedings of the Institute of Radio Engineers*, which was donated by Mr. Richmond to Tokyo University. I was fortunate to be the shipping agent for the invaluable books, received from Mr. Richmond at New York and forwarded to Tokyo University.

The University was so grateful to Mr. Richmond for his generous donation that the University held a presentation ceremony with the U. S. Ambassador, Mr. Allison, present. President Kaya of Tokyo University held a welcome party for Mr. and Mrs. Richmond on the 28th of June. I am commissioned to tell you about this as it will explain how Mr. Richmond has shown his great kindness toward us in Japan before his visit here.

Mrs. Richmond has a keen interest in Japanese art, I understand. Review of the local art in its country would give more interest and impression. We hope that both Mr. and Mrs. Richmond enjoyed visiting this country and will come again.—YOSHINORI CHATANI '22, President, 2862 Setagaya 5-Chome, Setagaya-ku, Tokyo, Japan.

Lehigh Valley

The annual spring meeting of the M.I.T. Club of the Lehigh Valley took place on Friday, June 13, 1958, as a social event with the assistance of the fair sex. There were about 60 people present, including 28 members of the club. Cocktails and a fine dinner were enjoyed in the Colonial Room of the Lehigh Valley Club, after which a brief meeting was held for the purpose of electing officers for the coming year, as follows: President, G. W. Spaulding '21; Vice-president, J. M. Smyser '35; Members at Large, W. M. Cline, Jr., '29 and O. A. Putnam '33. The terms of office of the secretary, treasurer, and the other four members at large did not expire at this time.

The group then formed a motor cavalcade and proceeded to the Guthrie Playhouse, about six miles from Allentown, where the play *Cat on a Hot Tin Roof* by Tennessee Williams was enacted. This was a summer stock performance, starring Miss Geraldine Brooks, and was produced in a theatre in the round style. Everyone agreed that the acting was excellent but the theme of the play was certainly unusual and the subject of considerable comment during and after the performance. This was the first dinner and theatre party sponsored by the club, and it seemed to be enjoyed by all.—J. T. ACKER, Secretary, 154 Langhorne Avenue, Bethlehem, Pa.

Long Island

Our Gilgo Beach party in August was a thoroughly enjoyable outing. Credit for arrangements, including the fine weather, goes to Ralph Krenkel '46 and coworkers Doug Tooley '28, Bob Kress '51, Mike Cantor '39, and Ed Ortler '57.

This year's activities are starting with a barn dance on October 17. This will be history by the time of this publication, but we are looking forward to seeing a lot of you there. Watch the mail for news of our November meeting—we have plans in the works that are a bit too fluid for an announcement here. In February there will be another movie and talk by Commander Irving Johnson on his latest world-wide travels with the sailing ship *Yankee*. Judging by past performance, this should be a most entertaining evening. For details, get in touch with Bill Leffingwell '49, 58 Bogart Avenue, Port Washington, N. Y.

Last, but very far from least, we have finally managed to snare Dean Harrison for a dinner meeting. The date to keep open is Friday, March 20, as this is an occasion that is not likely to be repeated soon.—RICHARD G. STEUER '46, Secretary, 30 Jamaica Avenue, Hicksville, N. Y.

Miami Valley

Present at the fourth and last meeting of the Club's annual picnic held at Eastwood

Park on Saturday, June 28, were Mr. and Mrs. Z. Abuza'41, W. T. Adams'21, Mr. and Mrs. C. M. Billman'25, Mr. and Mrs. R. E. Bockhorst'46, Nish Cornish'24, Mr. and Mrs. S. Heller'43, Mr. and Mrs. R. T. Olsen'42, Mr. and Mrs. R. A. Poirier'50, and Mr. and Mrs. W. L. R. Rice'53.

Then it was that the rueful and joyful news came out about Steve Heller's moving on August 1 to Cleveland finally to get to work as assistant sales manager of the A. O. Smith Corporation. He was immediately and forcefully relieved of his gavel, which was turned over to the undersigned, and made to dish out the delicious victuals, which he himself had prepared that morning. After the crew had relieved their hunger and thirst pangs, they were a little more lenient and, yes, even effervescent in their praise of Steve's handling of the Club's affairs. They then proceeded to elect C. M. Billman to the chair of secretary-treasurer for 1958-1959 and to voice disapproval of Olsen's leaving early to play bridge.

We were indeed lucky to have caught Bill Adams between trips and extraordinarily fortunate to have Nish Cornish, President of the M.I.T. Club of Mexico, attend the intimate function. Nish was visiting in Troy at the Hobart Manufacturing Co. and spent some time finding the park and camp site. We all promised to descend on his villa during vacations in future years.—R. T. OLSEN'42, former Secretary-Treasurer, Standard Register Co., Dayton, Ohio.

New Hampshire

The M.I.T. Club of New Hampshire held its annual meeting on May 23 at the Eagle Hotel in Concord. After a delightful social hour, a delicious dinner was served by Paul W. George'22 and his charming wife Frances, host and hostess.

Charles R. Prichard'30 presided and introduced the speakers. Lobby Lobdell'17 made a few remarks about the situation at the Institute in his usual humorous vein. He was accompanied by his charming wife. Dr. F. Leroy Foster'25, Director of the Division of Sponsored Research, gave the main address of the evening. He brought out many interesting facts about his own division, as well as the general activities of the Institute. Personally, I was amazed to learn of the number of unions with which the Institute must negotiate.

Officers were elected for the ensuing year and are as follows: President, Norman P. Randlett'22 of Laconia; Vice-president, Glenn D. Jackson'27 of Amherst; delegate to the Alumni Council, Lawrence C. Hall'35 of Amherst; and Secretary-Treasurer, Blaylock Atherton'24 of Nashua.

Among those present were: George E. Apel'26; Blaylock Atherton'24; Louis A. Arnold'42; Dan H. Allen'55; Reginald A. Bisson'30; Arnold B. Bailey'25; F. Tenney Clough'38; Jere R. Daniell'97; James W. Doon'17; Paul W. George'22; Leigh S. Hall'14; Sidney L. Hall'43; Lawrence C. Hall'35; Clarence G. Holt'17; William T. Kwan'54; Leon W. LaBombard'41; Philip deG. Labombarde'47; Harold E. Langley'19; Sing Leong'45; Charles R. Prichard'30; Charles P. Puksta'50; Norman P. Randlett'22; Roger R. Smith'26; Herbert D. Swift'15; and Lawrence Flett'18.

Many of the members brought their wives, and everyone agreed that we had had a most

pleasant evening.—BLAYLOCK ATHERTON'24, Secretary-Treasurer, 142 Main Street, Nashua, N. H.

New Haven

The 1957-58 season was a very successful one for the Club, with the membership reaching 91 Alumni from the New Haven County area. The Club conducted three meetings during the 1957-58 season and, in addition, Waterbury area Alumni held a dinner honoring Mr. Richard M. Stewart '32, who was appointed president of the American Brass Company in April, 1958.

On November 20, 1957, we held our first dinner meeting at the Yale Faculty Club in New Haven. Our speaker was Mr. Charles E. Smith'00, retired Vice-president of the New Haven Railroad. His talk was concerned with his recent experience as a consultant to the Spanish Railway System and was thoroughly enjoyed by the 55 members and guests who attended.

Our second dinner meeting was held on March 6, 1958, again at the Yale Faculty Club. The speaker was another of our own members, Mr. Lawrence B. Grew'27, Transmission and Outside Plant Engineer for the Southern New England Telephone Company. Larry's talk was concerned with "Voices Beneath (and Over) the Seas." He presented a color movie on a recent trans-Atlantic cable laying project and a demonstration of a trans-Atlantic telephone call.

On June 21, 1958, we held our annual outing at the Pine Orchard Club, Branford. Unfortunately the cool and showery weather limited the outdoor activities. Included among four of the hardy members who played golf were two members from the earliest classes represented at the outing: Hudson Hastings'07 and Harold Manning '12. Most of the members and their guests played bridge and canasta throughout the afternoon. In late afternoon, we enjoyed a pleasant cocktail hour followed by an excellent Pine Orchard buffet dinner. Following dinner there was a business and election meeting at which the following men were elected officers for the 1958-59 season: President, Gregory G. Gagarin'43; Vice-president, John P. Lynch, Jr.'52; Secretary, William J. Lyons, Jr.'48; Treasurer, Philip A. Horrigan'48; and Governor-at-Large, Roger W. Purcell'28.

It was also announced that the Club will prepare a directory during the 1958-59 season to be distributed to all paid-up members. Retiring President Roger Purcell extended his thanks to everyone for their assistance during the past year. We then viewed a superb color film on the *Wilderness Alps of Stehekin* of the Northern Cascade Mountains in Washington State.

On June 3, 1958, 35 Alumni from the greater Waterbury area met for a dinner to honor Mr. Richard M. Stewart'32, the new President of the American Brass Company. Joseph G. McNeill'55, Harold G. Manning '12, and John P. Lynch, Jr.'52 served as members of the dinner committee with Harold Manning acting as toastmaster at the dinner. Welcoming talks were given by John R. Freeman, Jr.'16, Vice-president of Metallurgy and Research at the American Brass Company; Roger W. Purcell'28, President of the New Haven County M.I.T. Club; and Charles E. Fulkerson'33, President of the Waterbury Pressed Metal Company.

We are all looking forward to seeing you at our 1958-59 meetings. If you have not been receiving the meeting announcements, please notify your new Secretary, W. J. Lyons at the Southern New England Telephone Company, 227 Church Street, New Haven 6, Conn.—JOHN P. LYNCH, JR.'52, Retiring Secretary, 350 Taylor Avenue, Cheshire, Conn.

New York

Activities of the M.I.T. Club of New York continued at somewhat slackened pace during the summer months at the club headquarters in the Biltmore Hotel. Now that summer is over, the Club is more active than ever. The Club facilities are used to near capacity during the daily luncheon hours.

As mentioned in the last edition of The Review, there has been a change in membership dues structure. The response to this new arrangement during the summer months has been most gratifying. At this writing 150 members have subscribed to the Class A membership which includes house privileges; and approximately 950 members have subscribed to Class B, C, and D memberships. There are approximately 300 new members so far. A considerable segment of the membership has not yet reported. We hope that we will hear from them soon in order that we can achieve a balanced budget and surplus through additional dues revenue. We expect to have over 2,000 members listed in the club directory, which goes to press early in October.

On August 23, 1958, the Long Island Group sponsored a beach party at Gilgo Beach extending invitations to all members of the New York Club. We had a fine day, and a large and congenial group including youngsters helped to make the party an outstanding success. Our thanks go to Ralph Krenkel'46, who handled the arrangements for this affair.

As of this writing, the annual beer party will be held on October 8 at the Officers Club quarters in the 9th Regiment Armory. We look forward to a big turnout and a great social occasion. The annual Westchester dinner meeting is to be held on October 24 at the Scarsdale Golf Club. David A. Shepard'26 will speak on the Middle East. Harvey Kram'42 and Lee Bloom'40 are chairmen of these affairs. More about both of these annual occurrences will be reported in the coming issues of The Review.

Altogether we are looking forward to an outstanding schedule of activities for the coming year including such traditional affairs as the Silver Stein Dinner to be held on November 17, 1958, and the annual Technical Dinner to be held on February 5, 1959. More will be reported on these events in future issues of The Review.—VERNON O. BOWLES'33, Secretary, Holly Ridge Farm, North Salem Road, Katonah, N. Y.

Toledo

During the past year our group has been having monthly luncheons at the Toledo Club as well as several evening meetings to which the wives have been invited. This year's festivities are being concluded with an informal steak roast at the home of one of the members.

Some of our recent luncheon guests and speakers have been the new dean of engineering at the University of Toledo, Dr. Otto Zmeskal who received his doctor of science degree from M.I.T. in 1941; Mr. John Richards, one of the country's leading architects and head of the firm of Bellman, Gillette, and Richards; and Mr. Russell Rink, the new City Manager of the city of Toledo. We have averaged 12 to 15 Alumni at our meetings out of 40 or so who reside in the Toledo area. Al Picardi'44, our retiring President, and I wish to thank all the Alumni who have supported us so well during the past two years. We are now passing the reins over to Gid Spieker'50, who will serve as president, and Don Schlatter'51, who will serve as secretary.—WILLIAM C. MITCHELL'49, former Secretary, 2144 Madison Avenue, Toledo 2, Ohio.

Washington

At the last meeting of the M.I.T. Club of Washington, held at the Cosmos Club on May 22, 1958, the following officers for the new club year were elected: President, Major General Charles E. Loucks, U. S. Army (retired)'31; Vice-president, William C. Howlett'49; Vice-president for Membership Development, Colonel Ernest L. Osborne, U. S. Army Reserve (retired)'14; Secretary, Paul M. Robinson, Jr.'44; Treasurer, Arthur H. Heinzman'52; Assistant Secretary, Howard K. Smead'51; Assistant Treasurer, Anthony J. Navoy'50.

Our first meeting of the new season will be held at the Cosmos Club (2121 Massachusetts Avenue, N.W.) on October 17 at 6:30 P.M. This will be a regular dinner meeting highlighted by the presence of Dr. C. S. Draper'26, Head of the Department of Aeronautical Engineering at M.I.T., who will give us a talk on Inertial Guidance. We are indeed pleased to have such a distinguished speaker.

The program for the remainder of the season is as follows: *December 29*: Annual luncheon for Institute students and local prospective students, to be held at the Army and Navy Club, Farragut Square and I Street, N.W., at 12 o'clock noon. *February 20*: The Club is proposing to have a dinner dance at the Cosmos Club if enough support can be obtained among the members. It is hoped that if the dinner dance is popular and successful it can become an annual affair. *April 23*: A regular dinner meeting with the speaker to be announced later. Election of club officers will be held.

A large and well organized effort is being made this year to advise all Alumni in the Washington area of the existence and activities of the M.I.T. Club of Washington. We are looking forward to a successful year with a large number of active members. Anyone by chance overlooked should contact us at: M.I.T. Club of Washington, Professional Engineers Building, 2029 K Street, N.W., Washington 6, D. C.; phone, MEtropolitan 8-6112.—HOWARD K. SMEAD'51, *Review Secretary*, 6732 Nevius Street, Falls Church, Va.

Westchester

Howard Bollinger'43, Chairman for the Westchester Alumni for 1958-59, outlined plans at a pre-season informal meeting late in July. The first event will be on October

24, an autumn dinner meeting at the Scarsdale Country Club with Lee Bloom'40 as chairman. In the latter part of March, a combined get-together is planned with the Long Island Alumni. Bill Mueser'52 will be cochairman for the Westchester Section. A spring dinner meeting at the Scarsdale Country Club is being planned for June 3; Bill Moore'33 is chairman.

These functions will form the basis for the Section's activities during the coming club year. Other affairs may be planned by members as the year progresses.

The planning committee is made up of the following: Lee Bloom'40; Howard Bollinger'43, chairman; Tom Creamer'40; Ed Goodridge'33; Jim Margolis'52; Harold Miller'36; Bill Moore'33; and Bill Mueser'52.—JAMES M. MARGOLIS'52, Apartment C-1, 218 Richbell Road, Mamaroneck, N. Y.

Women's Association

The M.I.T. Women's Association annual meeting on May 17 was held at Endicott House, M.I.T. conference center in Dedham. This was a delightful spot for a luncheon meeting on a lovely spring day. No program was planned for this meeting, since the committee felt the members would prefer to enjoy the gardens. After an excellent and leisurely luncheon, the meeting provoked so much constructive and stimulating discussion that little time was left for strolling around the grounds.

It is always good to see some of our members whose busy lives make them infrequent attendants; and the group made the most of the opportunity to discuss the past, present, and future of M.I.T.W.A., with particular accent on the future. Details of the meeting will be available in the M.I.T.W.A. Newsletter for interested Alumnae.

Among the missing at the meeting was Katharine Adams Kulmala, IV,'44, editor for the last two years of the Newsletter, who has just left for Santurce, Puerto Rico, where her husband has joined the staff of the Development Commission.

As is usual at annual meetings, officers were elected: President, Frieda Omansky Cohen, IV,'45; Vice-president, Janet Sanford Perkins, V,'52; Recording Secretary, Anna Bailey, X,'54; Corresponding Secretary, Ruth Berman Pitt, V,'39; Treasurer, Priscilla Maurer Raymond, IX-B,'51; Executive Committee, Phyllis Winter Grosswendt, IV,'42, Dorothy W. Weeks, IX-C,'23, Charlotte Simonds Sage, IV,'13; Membership Committee, Grace Farrell, VII,'29.—MISS ANNA BAILEY'54, *Recording Secretary*, 61 Columbia Street, Brookline 46, Mass.

CLASS NOTES

1890

Harry L. Noyes celebrated his 90th birthday anniversary August 28. He has, in his own words, been out of circulation since '43, when he retired as consulting engineer of the Electro Metallurgical Co. He has been active in civil and banking affairs.

William P. Flint of 429 Montgomery Avenue, Haverford, Pa., Apartment C-401, writes a most interesting letter about his experiences on the Union Pacific. He worked some coal tests with Basford'89 between Cheyenne, Wyo., and Sidney, Neb., and

quite envied Creden, who was getting \$3.00 for an 11-hour day with Anaconda.

Mrs. John M. Howells writes that she and Howells are living in New York. A son, William White Howells, has succeeded Earnest Hooton as professor of anthropology at Harvard; and another son, John Hayes Mead Howells, is on the staff of the Boston Museum of Science. Like the rest of us, Howells is 90 years old and not too well.

The following announcement of the death of our former Assistant Secretary, Charles W. Sherman, appeared in the *Boston Herald* on January 19, 1958. Mr. Sherman died on January 17.

"Services for Charles W. Sherman, 87, of 1 Myrtle Street, Belmont, former president of the Belmont Savings Bank and a retired civil engineer, will be held at 3:00 P.M. tomorrow at the First Church in Belmont, Unitarian. Mr. Sherman died Friday at Mount Auburn Hospital in Cambridge after a short illness.

"He retired in 1938 as a partner in the Boston engineering firm of Metcalf and Eddy but continued as a consultant to the firm. He was president of the Belmont bank from 1937 until 1954 and vice-president at the time of his death.

"Mr. Sherman was also a director of the Merchants Co-operative Bank of Boston and a former Belmont water commissioner. A native of Kingston, he attended Massachusetts Institute of Technology and received a master of civil engineering degree from Cornell University in 1893. A resident of Belmont for 58 years, he was a member of the Unitarian church; Belmont Lodge, AF and AM, of which he was former worshipful master; and one of the founders of Belmont Chapter, Royal Arch Masons. Mr. Sherman was former president of the New England Water Works Association, former vice-president of the Boston Society of Civil Engineers, and a member of the American Society of Civil Engineers, American Water Works Association, National Geophysical Union, and Society for the Promotion of Engineering Education.

"He was also a member of the Massachusetts Society, Sons of the American Revolution; the Society of Mayflower Descendants; Colonial Club of Cambridge; Boston City Club; Engineers Club; and the University Club of Boston.

"Mr. Sherman leaves two sons, John M. Sherman of Waltham, industrial statistician for the Federal Reserve Bank of Boston, and Richard W. Sherman of Cross River, N. Y., a sanitary engineer for the Navy; and two brothers, Edward C., of Tyrone, Pa., and Herbert L. Sherman of Chevy Chase, Md."

Henry A. Nash, 89, died at his home in Weymouth Heights on July 21, 1958. He had lived in Weymouth all his life and before his retirement had been an engineer with the Bethlehem Steel Corporation.

Willard C. Tilson died at his home in Malden on August 18, 1958. He was a lifelong resident of Malden, a retired textile mill agent, and former treasurer of the First Congregational Church of Malden.—SPAULDING BARTLETT, *Secretary*, 516 Main Street, Webster, Mass.

1891

Professor Emeritus William H. Lawrence was chairman of the Division of Drawing from 1920 and of the Architectural Engi-

neering Course at M.I.T. from 1927 until he retired in 1938. He was also curator of the Lowell Institute from 1921 to 1953. An account of Professor Lawrence's life appeared on page 467 of *The Technology Review* in July.

A life of distinction spent in labors for Tech, laying the building stones one by one regardless of public acclaim or neglect. A student and a thinker, such devotion and consecration makes M.I.T. possible. Professor Lawrence fell asleep June 12 last.

Studying in the same course as that of William Lawrence was Louis A. Simon '91. The following story of his life appeared in the *Washington Evening Star* on May 12, 1958: "Louis A. Simon, 91, retired supervising architect of the Public Buildings Administration who influenced design of government buildings throughout the country, died yesterday at Doctors Hospital after a short illness. He lived at 3133 Connecticut Avenue N.W.

"Mr. Simon spent more than 40 years in government service. While he was supervising architect, President Roosevelt five times extended his term of office beyond the statutory retirement age. He held the post from 1934 until 1941. He was recalled from retirement in 1942 and served as an architectural consultant in the Public Buildings Administration from then until 1944.

"A native of Baltimore, he joined the Office of the Supervising Architect in 1896 after studying architecture [with the Class of 1891] at M.I.T. In 1905, he became head of the office's architectural division and occupied this position for almost 30 years before he was appointed supervising architect.

"Mr. Simon was a strong advocate of American Colonial architecture in government buildings. Other architects have said no other American exerted as much influence on design of courthouses, post offices, and other government structures as he did. At the request of President Roosevelt, he designed the Roosevelt Library at Hyde Park. He also represented the Treasury Department in the development of the Federal Triangle.

"He was sent abroad to study government buildings in Europe; and some of the ideas he formulated there were incorporated in the Archives Building, designed by John Russell Pope.

"Mr. Simon was a fellow of the American Institute of Architects and a past president of the Cosmos Club. He served on the committee that purchased and remodeled Townsend Mansion as the club's home. He also was a member of the National Institute of Arts and Letters and served as chairman of the American Institute of Architects committee which was in charge of restoration of the Octagon several years ago.

"In retirement, Mr. Simon spent much of his time gathering data for a history of the office of the supervising architect. He is survived by his wife, the former Theresa B. McConnor, of the home address."

My warm friendship for Louis Simon came about through these *Technology Review* notes. In one of the early letters to me, he writes: "Someday I hope our paths may cross, as I should like to meet and talk with you. Until then, we in the 80's will keep our flags flying." Some two score letters, telegrams, and phone calls, on all sorts of topics from Frank Lloyd Wright and his principles of architecture to my craze for

walking as cure for all human ailments, passed between us, until our friendship grew into deep affection.

What he thought of Tech he stated thus: "And now retired, I am thinking just how to express what M.I.T. did for me. I can say that in addition to grounding me in basic principles of architecture as one of the fine arts, the Institute gives its students a sense of direction that is invaluable throughout later life." His last letter to me, dated March 15, 1958, ends: "Well, take care of yourself. Affectionately, L.A.S." He fell asleep in Washington on May 11 last.

His Christmas greetings to me last December—just a plain engraved card: "Greetings and best wishes for Christmas and the New Year." And he had written below: "And God bless you, dear Channing, for your good works and words. Louis A. Simon."

One of the most useful and admirable members of the Class of '91 was Frank W. Howard. The following notice of his death was printed in the newspaper of his home town of Winchester, Mass.: "Frank Wallace Howard of 132 Washington Street died at his home June 10 after a long illness. He was 88 years old.

"Born in Newton, December 22, 1869, he grew up in Hyde Park and graduated from Massachusetts Institute of Technology in the Class of 1891. As a heating and ventilating engineer, he soon became active in public construction work, especially schools and hospitals, and was for five years chief of architects of the city of Boston. Later he went to work for Ingalls and Kendrick, a Boston firm of heating and ventilating engineers; and he owned and operated that business for many years.

"In 1906 he went to San Francisco for the rebuilding of the city following the great earthquake and fire. Returning to Boston in 1913, he was a prominent figure in engineering circles. He was for some time vice-president of the National Association of Heating Contractors, and from 1944 to 1952 he was a member of the Massachusetts State Planning Board.

"From 1943 to 1953 he was on the Winchester Board of Appeals, and he served on the Winchester School Building Committee in 1931. Retiring from Ingalls and Kendrick about 1930, he became treasurer of Bemis Associates in Watertown, a position he held until shortly before his death.

"Always a beloved figure among his many Winchester friends, he was a member of William Parkman Lodge, A.F. and A.M., and for many years a deacon in the First Congregational Church. He leaves two sons, Alan F. and Paul H. Howard, both of Winchester; eight grandchildren; and 23 great-grandchildren."

Frank was one of the constant supporters of the Class: always present at the class meetings, his word carried more weight than that of any of the rest of us. He was our excellent class secretary for a period before serious illness forced his retirement.

After paralysis, deafness, and other serious handicaps had prevented attendance at our meetings, he always sent the most cheerful and affectionate greetings. The last came before our annual meeting in June, 1957. The signature to this typed letter was a bit shaky, but the sentiments were firm and from his own loyal faithful self. Here it is in full: "Greetings to all survivors of good old

'91: I believe that you can all join me in looking back over your long life with a good degree of satisfaction and appreciation of the grand foundation that M.I.T. provided for you to build on. I have two sons and four grandsons who are building on that same foundation and doing well. Very truly yours, signed: Howard, F. W." Frank fell asleep June 10.

Thomas M. Brooks, a tall slender boy, blondish with blue eyes; silent, reflective, handsome—this was in late fall, 1887. We two were in Walker Building, second floor, looking out on Newbury Street. I said to Tom, "That brownstone house in front of us is handsomer than all the rest. Wonder who lives there?" "That," said Tom, "is the residence of Phillips Brooks. He is the uncle of my father."

That was an astounding statement for me: that among us ordinary chaps entering Technology, here was one so highly connected. Phillips Brooks, as I well knew, was the leader in all Massachusetts of moral and religious causes. Everybody knew and loved Bishop Brooks.

Tom Brooks was born in Boston on May 22, 1869; but when he finished at Tech, he started work for a Chicago engineering company, a company of which he, in due course, became president. On his retirement a dozen years ago he moved to La Jolla, Calif. I wrote three years ago asking that he tell of some of the fine things in his life, and the following is what I got: "My Dear Channing: Replying to your nice letter of February 19, 1956, I feel, as you do, that the best thing I ever did was to marry the girl I did 48 years ago.

"Another of the best things I ever did was going to M.I.T. I feel that the training and knowledge one gets there enables one to compete successfully with the demands of the highly complex commercial and technical business of the world of today. Last but not least, I feel that my decision to retire from active business in the East as soon as I was able and settle in California and take life easier was a very important step and added years to my life. Yours, Thomas M. Brooks." His wife writes me: "He died while out for a drive." What a dignified and lovely ending to a good and useful life.

Our annual class meeting came off well. It was held as a part of all Technology luncheon on June 16. We had a table allotment and sat and ate together. The attendance was all that could have been expected: Bunker, Cole, Damon, Earl, Tappan, and Brown. In addition Harry Cole brought his daughter—a lovely person, one who added to the pleasure of the occasion.

The only item of business was the choice we made of John Linfield Damon as president and treasurer of the Class, and the term of office was for life. Following that, we took up a collection for the new treasurer.—WILLIAM CHANNING BROWN, Secretary, 15 Forest Avenue, Hastings-on-Hudson, N. Y., November 4 to May 1; 36 Foster Street, Littleton, Mass., May 1 to November 1.

1892

Arthur Ober and the Secretary were the only members of '92 present at the Alumni reunion on June 16. Both of us attended the luncheon at noon in Du Pont Court and listened to the very interesting talks by

Chancellor Julius Stratton and President Jim Killian.

The Secretary has no news at the present time from any other class members.—CHARLES E. FULLER, *Secretary*, Box 144, Wellesley 81, Mass.

1893

On June 27, 1958, President Page sent a memorandum to all his classmates reporting on the 65th anniversary luncheon, together with copy of a letter he had received from Mr. H. E. Lobdell relative to possible allocation and distribution of Class of 1893 funds. Letters from Minard T. Barbour, Joshua B. Blair, Charles H. Johnson, Fred H. Keyes, Charles M. Taylor, Cadwallader Washburn, and William Whiston were read at the luncheon. Mrs. George Caldwell and Mrs. George Stose sent greetings from their husbands, who were unable to attend the luncheon; and Charles Spofford's daughter, Mrs. Walter J. Beadle, sent greetings from her father. Greetings from Howard R. Barton were contained in a letter which was received too late to be read at the luncheon.

In response to President Page's request in his June 27 memorandum, replies have been received from Minard T. Barbour, Joshua B. Blair, Courtland R. Darrow, Fred Keyes, Harry Latham, Emil Lorch, and Edward S. Page, all expressing approval of the suggestion regarding distribution of Class of 1893 funds in the Warren Institution for Savings.

We received a news clipping from the *Free Press* of Melrose, Mass., through the M.I.T. Alumni Office, telling about a happy family party in observance of the 60th wedding anniversary of Mr. and Mrs. Edward S. Page at their home on June 22. Attending were their daughters and son and their families, including grandchildren and great-grandchildren.

At the time of the class luncheon President Page received a letter from Dr. Joseph F. Nates, advising that George Glidden was convalescing at the Tyson Nursing Home in Taunton. It is with deep regret we report that Mr. Glidden died of a cerebral hemorrhage on August 2, 1958. Mr. Glidden, Treasurer and Secretary, was active in class affairs until a few years ago.

We are sorry to report the following deaths: Edmund I. Leeds on June 1, 1958; Alden R. Palmer on January 1, 1958; and George K. Dearborn on May 12, 1958. Mrs. Elizabeth Leeds Watson wrote that her father was able to go to his office mornings up until July 1, 1957, when he had his first shock. Mr. Leeds left a son, Edmund, Jr., East Greenwich, R. I.; Mrs. Watson of Newton; and Miss Alice Leeds of Boston. Mr. F. H. Palmer of Cleveland advised that his father, Alden R. Palmer, died in St. Petersburg, Fla. We do not have any other information about George K. Dearborn.—GERTRUDE B. CURRIE, *Assistant Secretary*, c/o Fay, Spofford, and Thorndike, Inc., 11 Beacon Street, Boston 8, Mass.

1894

Alumni Day passed into history with its usual high and interesting standard of excellence. Much to his regret your Secretary was the only member of our Class to be present. Barton was expecting to come but was

prevented by illness in his family. Owen was temporarily disabled. Hunt missed, although usually on hand. A few letters have brightened the Secretary's lonely summer. Jack Nowell wrote in August that he had been busy with many things, especially gardening and entertaining friends and relatives. He wrote: "I do not think it was pride that went before the fall. I had been doing our Saturday morning stint, burning trash and watering to carry us over the week end and gathering vegetables; but I had a fall and hit the riser of the last new step leading from the lower terrace to the upper garden, and fell flat on my face on the new red rock path. With years of practice from boyhood up in falling, I was completely relaxed and did not break any bones but was jolted and had to lie doggo for a few days; and I am now happily back to normal." Having seen Jack's lovely home with its terrace and gardens, the Secretary can visualize what happened. No repetition, please, Jack.

Charles Abbot sent the Secretary a copy of his new book, *Adventures in the World of Science*, which in a most fascinating and instructive way records many of his experiences at the Astrophysical Laboratory of the Smithsonian Institution during the 64 years he has been associated with that famous institution. The book is dedicated to George Ellery Hale '90, whom Abbot regards as one of the greatest of American scientists and possibly the greatest astronomer of his era. The book describes the origin and organization of the Smithsonian, of which Abbot was secretary, the real administrative officer, from the middle Twenties until his retirement in 1944. He has continued in a research capacity. He also pays warm tribute to our classmate F. E. Fowle, whose whole scientific life was spent at the Astrophysical Laboratory, chiefly in collaboration with Abbot. In the work there Abbot became the friend of many of the most distinguished astronomers and physicists in the world, as his work took him to every continent and to all institutions interested in research on the solar constants and solar energy. Abbot is still pursuing the researches on long-range weather forecasting which he began many years ago, and in which he has made remarkable discoveries. A bulletin of the American Meteorological Society, published in June of this year, stated: "The petroleum industry estimates that a modest improvement in long-range temperature forecasts would be worth one hundred million dollars a year through more economical operations." Using methods of collecting data which he has used for many years with great success, Abbot believes this is an objective which can be reached in a very few years, if the industry will finance the additional research needed. Abbot's book is an important one, and should be in every large university or public library.

Jim Kimberly has spent the summer at his Wisconsin home in Neenah, but will doubtless be in Tryon for the winter. News from others is urgently desired.—S. C. PRESCOTT, *Secretary*, Room 16-317, M.I.T., Cambridge 39, Mass.

1895

In a recent letter from Charlottesville, Va., to your Secretary, Judson Dickerman wrote: "I am still on deck doing family chores; blowing off steam on economic and

educational questions to a few correspondents; losing my teeth uncomfortably fast; going without a cane; singing in the choir (I don't know whether *tolerated* or useful); and attending monthly meetings of a local stamp club consisting of college professors, lawyers, engineers, bankers, and others. Collecting stamps is a minor hobby, and donations are thankfully received."

In a later letter from Judson, comes the news of the death of Louis A. Abbot, Class of '95, in Hendersonville, N. C., on August 10, 1958.

Louis was born in Boston in 1874. He graduated from Boston public schools and from M.I.T. with the Class of 1895. His first job was with the locomotive department of the Boston and Maine Railroad. Later he joined the staff of the Interstate Commerce Commission and then joined the Bureau of Public Roads, where he served until he retired. He is survived by his wife.

We are glad to know that the Class of '95 was represented on Alumni Day by Andrew D. Fuller.

From a clipping from the *Boston Herald*, August 10, 1958, kindly forwarded by Orville B. Denison '11, we learn that Joseph E. Walworth died at his home in Andover, Mass., on August 9. After receiving a bachelor's degree from M.I.T. in 1895, he continued his study of chemistry at the University of Leipzig, receiving a Ph.D. in 1898. He taught chemistry at Williams College and worked for the American Woolen Company as chief chemist. In 1907 he and two brothers founded the Walworth Brothers Textile Mill in Lawrence, from which he retired in 1929. Survivors include his wife, Frances, and a son, William M., of East Lansing, Mich.

Another *Boston Herald* clipping brought the news that Samuel P. Hunt passed away in Manchester, N. H., on August 15. "He retired in 1935 after many years as chief engineer of the Public Service Company of New Hampshire. He was graduated from Dartmouth College in 1893 and later took graduate degrees at M.I.T."

Mr. Hunt received S.B. degrees in Courses VI and X in 1895 and 1896. He worked for the American Telephone and Telegraph Company, then went to the Manchester Traction Power and Light Company, forerunner of the Public Service Company, in 1907 as assistant general manager.

A philanthropist, he established a \$500,000 trust to aid civic youth groups. The fund financed a city swimming pool, a dining lodge at the Y.M.C.A. camp, and an administration building at the Boy Scouts' Camp Carpenter. He was a 32d degree Mason, chairman of the Carpenter Library trustees, president of the Gale Home, a trustee of the Merchants Savings Bank, a director of the New Hampshire Fire Insurance Company and of the Merchants National Bank, a member of the council of the Manchester Institute of Arts and Sciences, and a member of the Unitarian Universalist Church. Surviving is his wife, Florence M. Hunt.—LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass.

1896

The annual meeting of the Class was held at the luncheon table of the June 16 Alumni Day. Eight members were present: Damon, Davis, Driscoll, Gates, Litchfield, Lythgoe,

Pennell, and Smetters. The Secretary reported that the benevolent fund was \$1,940.52 and the class fund was \$219.68; there are 82 living members for whom the Secretary has addresses. There being no response to an invitation to present motions, the Treasurer assumed his accounts to be accepted and the secretaries to be continued in office.

At the dinner in the Rockwell Cage three members of the Class attended: Smetters, Litchfield and his guests Bob Buehrle and Bobby Bean, and Driscoll and his daughter Clare. Paul Litchfield continues his work with the Goodyear Company and gets about with a wheel chair and airplane. He was to go to a meeting of his class of English High School and to Green Harbor, Mass. The old English High building has been torn down and school is now opposite the Boston Latin in the old School of Commerce building on Louis Pasteur Avenue. Walter Humphreys '97 was at same table with '96, and he was chairman of the school committee in Brookline before the policy of tearing down schools was a practice as it now is. He is now retired from "Wool" (the National Association of Wool Manufacturers) and is president of the Hahnemann Hospital, where Dr. Rockwell was on the staff.

Between the lunch and the dinner the Secretary visited the Doctor. He was having a nap, but Mrs. Rockwell insisted on waking him because he certainly wanted to hear from the Class of '96. He was pleased to hear of each one present at lunch and said he had a letter from Litchfield. He had no pain but could not get around very well and was glad to hear that Fred Damon was able to attend the lunch. The juniors continue their guardianship and had Professor Sam Prescott '94 at the dinner table to keep an eye on '96. The concert by the Boston Pops Orchestra held in the Kresge Auditorium was a most admirable way to end a glorious day. It recalled a concert in the old music hall in Boston where 10 '96 men were relaxing at a table the night before final marks were announced; only one of the 10 failed to get a degree. Also a Tech night at Symphony Hall when the conductor refused to go on with the program until the manager was brought on the stage to make peace.

Joe Harrington's son came to our table at the luncheon and told us that his father was at home sick in bed and regretted he could not be with us.

These happenings were recorded before leaving for summer at Plymouth, where word came of Dr. John A. Rockwell's death on July 23. The memorial service at Mt. Auburn was attended by Damon, Hedge, Lythgoe, and Michael Driscoll '41 representing his father. Technology named the Rockwell Cage as a testimonial to the years of service and devotion Dr. John had rendered. In response to the Secretary's notification sent to each member Charlie Hyde, who was a classmate at Norwich, expressed in words what we all feel in our hearts: "Our Class owes to John a tremendous debt because of his long years of service as a faithful secretary. John never counted the hours which he spent in this labor of love, and certainly he never stinted himself in that work. John was a brave man, a loyal friend, a gentleman in the truest sense of the word, and a physician who was an ornament to his profession. He made a distinct contribution to the knowledge and use of X-rays as a therapeutic

agent in medicine." From Mrs. Isabelle B. Rockwell comes this note: "May I thank John's beloved Class of '96 for its kind contribution to the American Cancer Society in his memory. It would have pleased him very much had he known."

While in Washington last October a call was made at Marshall Leighton's office; he was not there but later telephoned that he was busy getting ready to retire to Portland and would write when he was settled there. Mr. O. B. Denison '11 sent me a clipping from the *Portland Press Herald* telling of Marshall's death on August 29 and giving a full account of his many activities as a consulting engineer and as an enthusiastic patriotic citizen. He was generous contributor to the notes of '96 telling of the doings of classmates in Washington.—JAMES M. DRISCOLL, *Secretary*, 129 Walnut Street, Brookline 46, Mass. HENRY R. HEDGE, *Assistant Secretary*, 105 Rockwood Street, Brookline 46 Mass.

1897

Charlie Breed was a classmate who truly followed his profession in certainly a most distinguished manner. He was, with Charlie Bradlee and Harry Worcester, the most active graduate in class affairs since our early days. The trio formed the center of class activities as our class committee for a period of 40 to 50 years. Charlie's personal devotion to the Class was exemplified in the tremendous effort he made to attend our 60th reunion, when he was driven from Camden, Maine, for our luncheon at M.I.T. Endicott House. Despite ill health at the time, he took a most prominent part at that meeting.

In whatever activities the Class may have henceforth, not only will his presence be sorely missed, but furthermore we will lack those illuminating and often humorous stories of his experiences as an expert witness under cross-examination by opposing counsel in court involving railroad cases. The *Boston Herald* of Monday, August 11, contained the following:

"Camden, Maine.—Professor Charles B. Breed, Head of the Department of Civil Engineering at Massachusetts Institute of Technology from 1935 to 1945, died last Saturday night in Camden Community Hospital. He was 82.

"Professor Breed was one of the foremost authorities on railroads and highways and was the coauthor of *Principles and Practice of Surveying*, the recognized and most widely used text in his field.

"A former resident of Lynn and Newtonville, Mass., he had made his home here on Harbor Road since 1950. Until about five years ago he maintained an active practice as a consultant.

"Before World War II, he conducted surveys of both the New Haven Railroad and its Old Colony division; and in 1935, at the request of Governor Curley, he headed an investigation of flaws in the construction of the Worcester Turnpike.

"In the Sacco-Vanzetti case, he was relied upon by both prosecution and defense in his expert testimony as to lines of witnesses' sight and bullet trajectories.

"Born in Lynn, he was the son of Charles Otis and Sarah (Guilford) Breed. He was graduated from M.I.T. in 1897 and only nine years later was appointed professor of railroad and highway transportation there.

"Among the railroads that employed his services were the Pennsylvania, Boston and Maine, Boston and Albany, and Vermont Central, as well as the Association of American Railroads and the Railway Association of Canada.

"With Professor George L. Hosmer '97, he published the two-volume surveying text in 1906. With regular revisions, the books have remained the 'Bible' of the craft since then.

"He was a former president of the Boston City Club, the Boston Society of Civil Engineers, the New England Railroad Club, and the Breed Family Association.

"A former director of the American Society of Civil Engineers, he was also a member of a number of other professional societies and of the Algonquin and Brae Burn Country Clubs.

"Husband of the late Elsa P. Edson Breed, he leaves two sons, Charles A. of Newtonville, Mass., and David E. of Branford, Conn., and a daughter, Mrs. Nancy E. Campbell of Wilbraham, Mass."

At the annual luncheon in the Great Court on Alumni Day in June only six members of the Class were present: Binley, Daniell, Humphreys, Olin, Wadleigh, and your Secretary. We were pleased to welcome in addition Mesdames Daniell and Wadleigh. At the social hour the same afternoon and attending the banquet and Pops concert were the Daniells and the Wadleighs only.

The Alumni News of William Penn Charter School, Philadelphia, May, 1958, edition, contains an article regarding our classmate Irénée du Pont which was accompanied by a photograph—a striking likeness—including his omnipresent pipe held in his left hand. Although two months younger than your Secretary, Irénée graduated from Penn Charter a year earlier—clearly a precocious youth. The article follows:

"On February 19, 1958, the Alumni Society awarded to Irénée du Pont the Alumni Society Award. This award is given each year to a graduate of Penn Charter who has reflected lasting credit upon his school.

"Irénée was born December 2, 1876, near Wilmington, Del. His father, Lamot du Pont, considered the country's foremost authority on industrial explosives, was killed in an explosion of glyceryl trinitrate in 1884.

"Mr. Du Pont attended Penn Charter, graduating in 1892, then studied one year at Phillips Academy, Andover, Mass. He was graduated by the Massachusetts Institute of Technology in 1897, received his master's degree in chemical engineering from the same school one year later, and proceeded to round out his education by taking a job as a mechanic in a machine shop.

"After four years in the general contracting business, he joined the Du Pont Company in 1903. From 1905 until 1914 he served variously as assistant treasurer, assistant to the general manager, and manager of the Development Department.

"The outbreak of the first world war found him a vice-president. In 1915 he became chairman of the Executive Committee, which was in charge of the general administration of all the Du Pont Company's activities.

"During his presidency, the company faced the double task of dismantling the great Du Pont war plants, which supplied the Allies with 40 per cent of the smokeless powder consumed by their armies and navies

in the war, and rebuilding, to fit peacetime production, an organization that in a few months following the Armistice shrank from 100,000 employees to about 30,000.

"Mr. Du Pont led the battle of the American chemical industry to obtain effective protection against European dyes and other coal-tar chemicals, as a result of which a powerful new independent industry was built in the United States.

"Both in business and privately Mr. Du Pont has been an enthusiastic supporter of scientific research, which he has predicted will in time produce the means to happiness for all. He has given large sums to the Wilmington General Hospital and for research into the treatment and cure of both tuberculosis and cancer. He has been one of the financial mainstays of the cancer research conducted by the Biochemical Research Foundation, Newark, Del.

"He was one of the organizers of Tower Hill School, in Wilmington, and since 1922 has been chairman of the board of the Delaware Safety Council.

"The Republic of Cuba awarded him the Cross of Carlos Manuel De Cespedes in 1935 for his services to storm sufferers in 1933, when a hurricane devastated a part of Matanzas Province. Since 1928, Mr. Du Pont has maintained a winter home on Icos Peninsula, on the northern shore of Cuba.

"It is indeed fitting that such a man receive the Alumni Society Award."

The following appeared in the *Holyoke (Mass.) Transcript*, June 30, 1958: "A sales correspondent with the American Writing Paper Corp. retired Friday at the age of 83.

"Augustus C. Lamb of 61 Hillcrest Road, Amherst, who had served 59 years with the firm was presented a gift at a luncheon Friday at the Hotel Roger Smith. Executives of the firm were hosts.

"One month after American Writing was formed in Holyoke in 1899, Mr. Lamb joined the firm at the Nonotuck mill. A year later, he was transferred to the New York City office as junior salesman. He left six years later as salesman in charge when he was transferred to the Holyoke office as salesman. He covered the southern New England territory at first, and later eastern New England was added to his territory.

"In 1922, he was named sales correspondent working out of the Holyoke office, a post he held until his retirement.

"Lamb, a native of Cambridge, entered the paper business following his graduation from Massachusetts Institute of Technology in 1897. He was employed by the Hurlburt Paper Co. of South Lee for two years before joining American Writing.

"He has three sons, Roland, Donald, and Beverly."

Gus writes in connection therewith: "Sorry there was no 61st reunion—how about the 62d in 1959? Perhaps this will break the ice and you will hear more later." Gus has a good point there, for time marches on! All those in favor of a class reunion in 1959 we hope will write the undersigned and state, if one were held, your suggestions regarding it and whether you would attend.

The Grim Reaper has been at work, and it is with much regret that we report the death on July 3 of J. Franklin McElwain. Although he left M.I.T. before his second year, his buoyant and charming personality made

much impression on those who were associated with him in our freshman year. He was in Course IX. The same impression held true in later years. He was a generous contributor to M.I.T. and to our athletic activities. Walter Humphreys writes as follows:

"His interest in M.I.T. continued. He was successful in business. I remember how ably he helped our Alumni Committee when we took part in an appeal for revival of state aid—one series of scholarships was about to end and we asked for renewal. That was before the state constitution had been changed to prevent gifts to church schools, and so forth.

"Jim Rollins '78 was president of the Athletic Association and led our presentation. Dr. McLaurin spoke effectively, and McElwain presented a grand appeal—and did it particularly well as a successful businessman of the Alumni. His handling of his message remains clearly in my memory."

The *Boston Herald* of July 4 contained the following: "J. Franklin McElwain, 83, Boston shoe manufacturer, died yesterday at his summer home at 257 Atlantic Avenue in Cohasset.

"He was chairman of the board of J. F. McElwain Co., Nashua, N. H., and honorary chairman of the Melville Shoe Corp., New York City.

"Mr. McElwain, a native of Charlestown, was a graduate of Boston Latin School and Massachusetts Institute of Technology. During both world wars he served as a member of national shoe, leather, and rubber councils.

"He was vice-president of the New England Shoe and Leather Association and past president and a director of the National Shoe Manufacturing Association.

"A trustee of New England Deaconess Hospital, he was a corporation member of New England Baptist Hospital and of Northeastern University.

"He belonged to the Union and Algonquin clubs, The Country Club, and the Union League of New York City. His Boston home was at 21 Chestnut Street, Beacon Hill, and he also maintained a residence in Sea Island, Ga.

"Survivors include two daughters, Mrs. Samuel Wakeman of Hingham and Mrs. Mary M. Gleason of Chestnut Hill, and six grandchildren."

John Sanford Humphreys, 83, a member of our Class who later became distinguished in his profession, died June 30 at Memorial Hospital in Brattleboro, Vt. He had three brothers (sons of an eminent physician of New York City), one of whom, James Barnes Humphreys, was a member of the Class of '95 at M.I.T., who later graduated from Columbia University. Jack, as he was known to his friends, had a genial and charming personality with an unusually keen sense of humor. In undergraduate days, as a student in Course IV, he was noted as a mimic and as a joyous companion. While not especially active in Institute affairs, we recall he did at one time play quarterback on the M.I.T. football team. We do not recall that he attended any of our reunions, nor did he participate in class affairs. He was a member of Delta Psi fraternity. The following appeared in the *Boston Herald* of July 3, 1958:

"Funeral services will be private for John Sanford Humphreys, 83, professor emeritus of architecture of Harvard University and

former overseer of the interior decoration of the New York Public Library.

"He died Monday in the Brattleboro Memorial Hospital. His father, Dr. George Hoppin Humphreys, was said by author Clarence Day to have suggested the doctor in *Day's Life With Father*.

"Professor Humphreys was educated at St. Mark's School, the Massachusetts Institute of Technology, and the Ecole des Beaux Arts in Paris, France.

"Before joining the Harvard faculty he was a member of the New York architectural firm of Carrere and Hastings. He retired from Harvard in 1941 and had become a recognized authority on Bermuda architecture after publication of his book, *Bermuda Houses*, in 1922.

"Professor Humphreys was a member of Delta Psi fraternity, The Century Club, the Harvard Club, and St. Anthony Club, New York.

"He leaves his wife, Leonie Harding Humphreys of Newington, Conn., and their son, David. He also leaves a son and daughter by a first marriage: Dr. George Hoppin Humphreys, 2d, professor of surgery at Columbia University, and Miss Elizabeth Williams Humphreys of Boston. A memorial service will be conducted at a later date in the West Dover church."

The following letter from our classmate Professor Alpheus Woodman, 367 School Street, Watertown 72, Mass., was dated July 3: "I am writing to let you know of the death of my brother, George M. Woodman '97, on June 19.

"He had a stroke a number of years ago and never fully recovered from it. He had been in a mental institution for the last 14 years, and I was his legal guardian. He was never married.

"He and I were twins and always looked very much alike. He graduated in Course I; and several times I had the experience, when on some visit to the Engineering Building, of being greeted by some of his instructors and questioned about some work in civil engineering."

In reply to a note of sympathy we sent on behalf of the Class, Professor Woodman wrote again on July 12: "There is not much to say about George's professional career. After graduation he entered the Maintenance of Way division of the Boston and Maine Railroad and remained with them until his retirement about 30 years ago.

"I have been saddened, also, by the recent death of my wife, who was M.I.T. 1900, Course V. We had been married 55 years."

After a long illness Mrs. Charles R. Currier died on June 7, 1958, at her home, 49 Eliot Street, Jamaica Plain. Charlie has, of course, always been a loyal and faithful member of the Class and a regular attendant at our reunions. For many years, during his wife's illness, Charlie has carried on the manifold duties of the family home and devoted his entire time in constant attendance upon his invalid wife. As a token of sympathy to Charlie we sent a floral tribute on behalf of the Class to Mrs. Currier's funeral. —JOHN P. ILSLEY, *Secretary*, 26 Columbine Road, Milton 87, Mass.

1898

The 60th reunion of the Class of '98 synchronized with M.I.T. Alumni Day, June 16, 1958. The reunion was described in class

letter number 23, July, 1958, by President Edgerly in his usual informative and pleasing style. He promised further details from the Secretary in subsequent Class Notes.

For the sake of those in the Class who may have mislaid this letter, as also for those not members of the Class but readers of The Review and interested in all Technology events, we quote briefly from an earlier letter, April, 1958, announcing the reunion.

"The committee for the 60th reunion, President Daniel W. Edgerly, George T. Cottle, Frederic A. Jones, Joseph C. Riley, and the Secretary propose the following program: (1) Alumni Day, Monday, June 16, luncheon in Du Pont Court (special table for '98); (2) '98 get-together Tuesday, June 17, buffet luncheon at Algonquin Club, 217 Commonwealth Avenue, Boston, Mass. Headquarters, as at the 55th, will be at Hotel Vendome, 160 Commonwealth Avenue, convenient to M.I.T. and the Algonquin Club."

Forty-nine cards were received in response to this letter; thus more than half the current enrollment of the Class. Not only this, there were also numerous letters; and many who could not come sent greetings.

The Alumni Day Committee arranged for a special table for '98 at the Alumni Day luncheon in Du Pont Court on Monday, June 16, 1958. The '98 table was in front of the head table and adjacent to the special tables arranged for 1908, the 50 year Class. There were 28 at the '98 table: thus, classmates Bragg, Chapin, Cottle, Dawes, Davis, Edgerly, Fenner, Harrison, Hewins, High, Jones (F. A.), Lacy, Milliken, Norton, Riley, Wesson, and Woelfel; and as guests, Mrs. Elliot R. Barker, Mrs. Arthur A. Blanchard, Miss Lena Bragg, Miss Marion L. Chapin, Miss Sarah Dawes, Mrs. Lyman F. Hewins, Mrs. James A. Jack, Mrs. E. A. Milliken, Professor Samuel C. Prescott '94, Edward Peterson who accompanied our classmate Norton, and Robert Jones, grandson of F. A. Jones, who has become practically a member of the Class. What a buzz of conversation and what a good time we all did have!

Pictures concerning the more formal aspects of Alumni Day with a comprehensive write-up concerning Alumni Day by the Editor of The Technology Review will be found in the July '58 issue of The Review, as also the speeches of Dr. James R. Killian, Jr., "Maintaining the Strength of U. S. Technology" and of Acting President Dr. J. A. Stratton, "Report of the Institute." It was especially significant that Dr. Killian, who is special assistant to President Eisenhower for science and technology, returned to M.I.T. for the occasion and apparently, as the picture on Page 481 of the July '58 Technology Review clearly indicates, enjoyed himself greatly.

Our Class President, D. W. Edgerly, is considerable of an amateur photographer, almost a professional; and on the sly he snapped various shots. He has kindly sent to us an excellent picture of George Cottle and also of our honorary classmate, Dean George Harrison. Probably he has sent pictures to other members of the Class. If any in the Class would like exemplars of this art, as above described, and will write to Dan, I am sure that he will be delighted to supply them.

We will add a few details to the excellent description contained in class letter 23,

July, 1958, of the '98 get-together Tuesday, June 17, at the Algonquin Club. George Cottle had arranged that the entire lower floor of the southern building of the Club would be at the disposal of the Class. There were present in all, 29: classmates Babson, Bragg, Chapin, Cottle, Dawes, Davis, Edgerly, Fenner, Hewins, High, Jones (F. A.), Lacy, Mrs. Eva Crane Morrill, Milliken, Norton, Riley, Thompson, Wesson and Woelfel; and as guests, Mrs. Roger W. Babson, Mrs. Elliot R. Barker, Mrs. Arthur A. Blanchard, Miss Marion L. Chapin, Mrs. Doris Davis to accompany Ernest Bragg, Mrs. Lyman F. Hewins, Mrs. Edward A. Milliken, Mr. Theodore Morrill '31, Eva Crane Morrill's son and an adopted member of '98, and the singer, Miss Victoria Samuelian and her accompanist.

We have asked our gracious host at the Algonquin Club, our classmate George T. Cottle, to describe certain aspects of the get-together, for which he assumed entire responsibility—thus the choosing and decorating of the rooms and the details of the feast. Those who attended the 50th and 55th reunions will recognize and appreciate the artistic and business ability with which George almost without effort arranged for unusual features at dinners and buffet lunches. (We would call them combination feasts and art treasures.) George will send this write-up for later class notes.

We wish that we could include in these class notes, for those who are not members of the Class of '98, the write-up of President Edgerly concerning this get-together. This is contained in class letter 23, July, 1958, with, in addition, a two-page exposition under the title, "Reunions," in which he briefly summarizes these high spots in the life of the Class. This, however, would prolong the class notes unduly. Those who may be specially interested can doubtless secure a copy by writing to Daniel W. Edgerly, 76 East Monroe Street, Chicago 3, Ill.

There were so many happy events transpiring at the get-together that there was only time for the briefest of reports from the Secretary concerning finances. This is something that has seldom been brought to the attention of the Class. '98 has been fortunate in numbering among its officers friends many generous persons who have taken care of Class expenses. The situation was outlined by our President in class letter 22, May, 1958, from which we quote in part:

"Class Treasury: It has reached the zero point, in fact, it is sub-zero. The last solicitation was in 1949. There have been, and will continue to be, expenses for varied items which the Class as a whole should pay for. For your information, over the past nine years there have been expenses privately financed by individuals. For example: the Secretary's class notes, seven to nine times a year in The Review, require stenographic and clerical work; the two general class letters each year; the three special reunions which were sizable and outstanding affairs. During the recent years our membership has declined. So we are suggesting donations of the five and ten dollar size. However any amount that you send in will clearly indicate your continued interest in the Class. Mail to Edward S. Chapin, Secretary."

The response to this appeal was almost immediate and astonishing. Twenty-three

classmates sent contributions ranging from \$5.00 to \$100.00 totaling \$310.00. Against this there were charges totaling \$77.49: \$42.49 for stenographic and clerical expense for the 60th and \$35.00 for the singer and accompanist. This leaves a balance of \$232.51.

In addition, many classmates sent checks or cash contributions directly to George or through the Secretary to share the expense at the Club, and George paid the balance.

Is it any wonder that at the business meeting following the luncheon the following resolution was presented and voted unanimously? "Be it resolved that a vote of thanks be given to George Cottle for the 60th reunion luncheon at the Algonquin Club on June 17, 1958."

Furthermore, in remembrance of the 50th and 55th reunions and the efforts and contributions of George and other generous classmates, the following resolution was presented and passed unanimously: "Be it resolved that a vote of appreciation be given to Roger Babson and to George Cottle; also in memoriam to our departed classmates, George Treat and Lester Gardner, for their major part in making our 50th and 55th reunions outstanding successes."

Further features of the get-together at the Hotel Algonquin, together with excerpts from the letters and the greetings, will appear in subsequent Class Notes.

Kindly note that the Secretary's address from October 15, 1958, to April 14, 1959, will be c/o Hotel Vendome, 160 Commonwealth Avenue, Boston 16, Mass.; and thereafter, Number 2 Gregory Street, Marblehead, Mass.—EDWARD S. CHAPIN, Secretary, Hotel Vendome, 160 Commonwealth Avenue, Boston 16, Mass.

1899

Alumni Day turned out to be that rare kind of a day the poets talk about. In fact it was almost raw with a cold wind blowing across the campus. The top of the tent in which the luncheon was served in the quadrangle billowed up and threatened to take off like a satellite. A total of nine classmates were present at the luncheon. They were: President Bill Kinsman, Carroll Brown and wife, George Glover and wife, Gardner Barry and his sister, Miles Sherrill, Hervey Skinner and wife, Harry White, Percy Witherell, and Burt Rickards.

At the banquet all of the above named were present except Brown and White. President Kinsman appointed a committee to outline plans for our 60th reunion next year.

Among those Tech Alumni participating in the summer general meeting and air transportation conference of the American Institute of Electrical Engineers, June 22 through 27, was Frederick W. Grover '99, who gave a paper entitled "The Numerical Evaluation of Expressions Involving Complete Elliptic Integrals."

Dr. Laurence A. Hawkins, VI, noted for his research in the electrical engineering field, died at his home in Schenectady, N. Y., on May 15, at the age of 81. Laurence was born in Pittsfield, Mass., and graduated from Williams College in 1897 with the degree of bachelor of arts. He then transferred to M.I.T. and received his S.B. degree with our Class. He first joined the staff of the Stanley Electric and Manufacturing Co. of Pittsfield,

Mass. Four years later that company was merged with the General Electric Co. of Schenectady, N. Y. There he was first in the patent department and later transferred to the signal equipment department. In 1912 he became research engineering assistant to the director of that laboratory and later became executive engineer. He was credited with originating the House of Magic (General Electric) tour in which the marvels of electricity are displayed by a traveling road show. He also helped introduce the G.E. line of radio receivers in 1930 and assisted in preparing scientific radio broadcast scripts.

After Laurence retired in 1947, he founded the Mohawk Development Company, designed to utilize the knowledge and talents of retired engineers in offering consultation services on electrical and mechanical problems. This company employed as many as 70 top flight scientists on important research projects. Hawkins was the first president and at the time of his death was chairman of the board. He was the author of a book, *Adventure into the Unknown*, which told the story of the first 50 years of General Electric Company's research work. Williams College, in 1944, awarded him an honorary doctorate in science. He was a member of Phi Beta Kappa and Sigma Xi.

When I visited Ed Packard at his winter home in Gulfport, Fla., the latter part of March, I reported that he seemed much improved from the effects of the two strokes he suffered around the first of the year. Now it is a pleasure to quote parts of a letter received from Mrs. Stone on June 9. She says: "You would be surprised at how much progress Ed has made. He cannot walk alone yet, but this morning he walked holding onto the nurse's arm. And many times, without realizing it, he will stand up without assistance."

I am deeply indebted to Margaret Sutermeister, daughter of Edwin Sutermeister, for details regarding the death of her father, and for a number of clippings from the local papers. Also to J. N. Stephenson '09, Vice-president of the National Business Publications Co. of Quebec. Ed was a classmate (V) of mine, so I have known him since September, 1895. On graduation, Ed went to the Cumberland Mills plant of the S. D. Warren Co., where he established a small research laboratory. At the time of his retirement after 52 years, he was chief research chemist for the concern and was known as "Mr. Research" in the paper industry. Quoting from the *Westbrook American*: "Few phases of papermaking had escaped the insatiable curiosity of Dr. Sutermeister and his keen analytical mind. He introduced starch as an adhesive in papermaking and perfected its use for binding pigment to paper body stock. He is credited with the process of the chlorination of starch, the major development between 1900 and 1920. He perfected a cooking process still used in the making of pulp... and conducted fundamental research on rosin sizing used in better finishes. He established specifications casein must meet as an ingredient in high quality paper. He contributed to the development of both clay and satin white as well as the newer pigments used extensively in papermaking and devised many new tests and methods for measuring quality of various grades of paper. In 1926 he published a book, *Chemistry of Pulp and Paper Making*, which for

many years has been the standard textbook of the industry. He was also the author of *Casein and Its Industrial Applications* and *The Story of Paper Making*, as well as some 50 articles in technical journals. He was a member of the Technical Association of the Pulp and Paper Industry and received their gold medal in 1935. Also a former member of the Society of Chemical Industry, the American Chemical Society, and the American Association for the Advancement of Science. An honorary doctor of science was awarded him by the University of Maine in 1948."

Ed's daughter Margaret says of him: "While his accomplishments in his field were of recognized importance, I believe that he drew an even larger satisfaction from his quiet, unpublishable, understanding counsel of the many associates and coworkers who came his way. Letters from a number of people who knew him, some of them years ago, attest to his influence on those just beginning to find their way."

Charles B. Page, XIII, died on February 7, at Evanston, Ill. In his earlier years, he built, with his partner, the steamer *Westamoo*, which ran for many years on Lake Sunapee, N. H., carrying mail and passengers. In Baltimore, Md., a few years later, he equipped many of the small Chesapeake Bay produce carrying boats with gasoline engines. After eight years in Baltimore, he went to the Midwest, where he sold engines and boilers for commercial use, giving much time to improvement in design of steam boilers. He was active in his own firm, the Page Associates, until three days before his death.

More details regarding the life of Wallace F. Goodnow were promised in the July issue. After spending some time in a mining camp in Montana, he returned East and entered the heating and ventilating field with the firm of Sturdevant, Pierce, Butler, and Pierce and also with the American Radiator Company (dates not available). During World War I he was first lieutenant in the Signal Corps, Aviation, Engineering Supply Division. In the early Thirties, Wallace was with the engineering staff of the Department of Public Works of New York City supervising sanitary and heating engineering work. From about 1935 on he was engaged in consulting work in heating, ventilating, and air conditioning engineering work. His inventive mind and his tendency for taking on and solving "impossible" jobs caused him to be called into consultation over a large area of the United States and Canada. I am grateful to Wallace's sister for the data on which these notes are based.—BURT R. RICKARDS, *Secretary*, 349 West Emerson Street, Melrose 76, Mass. PERCY W. WITHERELL, *Assistant Secretary*, 84 Prince Street, Jamaica Plain 30, Mass.

1900

Our annual reunion was held June 17 to 19 at The Pines in Cotuit, Mass., as usual. It was a small but congenial gathering including only five members of the Class and six guests. But these have met each year since our 50th anniversary and consequently greatly enjoy these annual meetings. Those attending were: George Atwood with his wife and daughter; Alek Newhall and wife; Stan Fitch; Jim Patch and wife; Minnie Lawley; and Elbert Allen and wife.

The two daughters of Louis Crowell, Gita and Lydia, and the latter's husband were with us one evening. This reunion was thoroughly enjoyed by all. It seems as though each such gathering is enjoyed more than any previous one. The only regret was that this will have been the last that can be held at The Pines, as this resort is to be permanently closed and the property sold or broken up. If we are to have future reunions, some other plan and some other place must be selected. We shall have a meeting of all interested who can get together sometime this winter to discuss this situation and make any plans.

On the day before the reunion seven of us met at the Alumni Day luncheon in Cambridge. These were Stan Fitch, Alek Newhall and wife, Minnie Lawley, Charlie Smith and wife, and your Secretary.

Looking over the class roster we find that out of 399 listed as having been affiliated with our class, 99 were living in June last. This included 45 of the 170 affiliates who graduated in 1900. In the class notes of the April Review we recorded the death of Salvador Madero. Subsequently we wrote to his son, Salvador Madero, Jr., M.I.T. 1929, and received from him an interesting account of the life of our classmate as follows: "Having graduated from Tech in 1901, he went to work for the Compania Metalurgica Panoles, South America, in their smelter in Torreon, Coahuila, which is only 150 miles from his home town, Parras, Coahuila, which is the center of the grape belt in Mexico. In the year 1904 he was married to Concepcion Gonzalea Sada, of Monterrey, and shortly after started dabbling with a process to extract rubber from the guayule shrub. He formed the Compania Exploradora Coahuilense and the Compania Guayulera 'La Nacional,' and both companies operated intermittently until the late 1930's. Don Salvador was very active in mining, having graduated from M.I.T. as a mining engineer. He created the Compania Carbonifera de Sabinas, S. A., to exploit the huge coal reserves in the northeastern part of the state of Coahuila. This company was sold some time later to the American Smelting and Refining Co., who are the present owners. In the state of Chihuahua he formed the Compania Minera 'La Aurora' y Anexas, to mine lead and molybdenum. This mining company is still in existence, although right now operations are closed because of the low price of molybdenum. He also formed the Compania Minera 'El Magistral' in the state of Sonora, Mexico.

"During 1913, when his nephew President Francisco I. Madero was assassinated, he and his family had to take refuge in the United States, having gone first to East Orange, N.J., where he was neighbor of the genius Thomas Alva Edison. A few years later he went to reside with his family in San Antonio and then to Corpus Christi. Three of his eleven children were born in the United States. When he finally was allowed to return to Mexico in 1920, he lived in Monterrey, N.L., for a few years and then went up to Mexico City, where he was actively interested in the oil business, having formed the Compania Exploradora 'El Ixtle,' and having obtained drilling concessions in land very close to some of Mexico's largest producers. All this was interrupted by the expropriation of Mexican oil properties by the government. At that time he went into

business with an Italian associate to form 'Nueva Carrara, S.A.,' to exploit marble in the State of Durango, Mexico, where he became actively connected with his brothers in the firm 'Ernesto Madero Hermanos,' (now 'Casa Madero, S.A.'). one of the largest distillers of spirits in Mexico. He was President of Casa Madero at the time of his death. He was also President of Agencia Madero, S.A., a large distributing firm of the Madero wines and liquors, in Mexico City; of Compania Vinicola del Norte, S.A.; of Compania Agricola del Rosario y San Lorenzo, S.A., and of Anuncios Modernos, S.A.

"Don Salvador Madero had 11 children, 10 boys and one girl. Seven of the boys are still alive, as well as the girl. Amongst these were three engineers, four doctors and one businessman. His only daughter married a doctor. He left 27 grandchildren. During his years in M.I.T. one of his closest friends was the late Lamot du Pont, who I understand was his roommate. Before entering college he attended preparatory school in Mexico and in Paris, France; and shortly before entering Tech he attended Chauncy Hall in Boston. Having made a fortune, he lost it when he had to flee to the United States during the Mexican revolution; but he made most of it back with an indomitable spirit and energy, in spite of the fact that some years he had five boys in college at the same time and that, you can well understand, was a tremendous drain on his financial resources.

"He died just a few days before reaching the age of 80 and just having had his 53d wedding anniversary. All of us who are left behind are proud of the name that he has left us." It may be of interest to add that the niece of Salvador Madero is now the wife of Harold Lobdell '17, Executive Vice-president of the M.I.T. Alumni Association.

John Wesley Brown died last April. After graduation from M.I.T. in 1900 he was assistant in analytical chemistry at M.I.T. for a year and then studied for two years in Heidelberg, Germany, obtaining his Ph.D. degree. He then returned to M.I.T. as instructor in theoretical chemistry for two years. In 1905 he went to Cleveland, Ohio, as director of the research laboratory of the National Carbon Co. In 1912 he founded and became president, treasurer and director of the Cleveland Electro-Metals Co., where he remained until his death. He originally came from Rye, Mass., and the *Independant Republican* of Newburyport last May carried the following (which is extracted from a letter written by Fanny Louise Walton): "John W. Brown, a farm boy of Rye, attended our high school when Enoch Adams was principal. John was a brilliant pupil. From my brother, James, his constant companion, I heard a great deal about a Mr. Stone, their teacher of chemistry and the popular physical director. Both boys admired him and were honor pupils. How fortunate that in the graduation class of 1895 the youths should come under the influence of the young man who for a year taught in Newburyport, later to become Chief Justice of the United States Supreme Court, Harlan Fiske Stone. Newburyport is outstandingly fortunate in having a Wheelwright fund, in the vicinity of \$1,000,000, to enable its worthy youth to have a free scientific education. Both lads entered M.I.T. and were graduated to climb still higher with the aid

of the Wheelwright fund. They received instruction for two years in Heidelberg, Germany. A degree of Ph.D. awaited them. Returning to America they found that aluminum was being worked over. Dr. John Brown entered a laboratory near Lakewood, Ohio. John married Miss Julia Terry at Galesburg, Ill. Their three sons now operate a laboratory their father started, of which aluminum is the chief product."

We have received the following: "Herbert O. Keay was born in Laconia, N.H. and graduated from the Massachusetts Institute of Technology in 1900 with an S.B. degree in mechanical engineering. Summer vacations were spent as a special apprentice in the Boston shops of the Boston and Maine Railroad. From 1900 to 1902 he was assistant plant engineer with the Pennsylvania Steel Co. From 1902 to 1906 he was chief draughtsman and later mechanical engineer with the Boston and Maine Railroad, Motive Power Department. At that time he came to McGill University as assistant professor of mechanical engineering, becoming professor of transportation two years later. In 1917, following a brilliant investigation into the cause of a sulphite digester explosion at Grand'Mere, he joined the Laurentide Company (now Consolidated Paper Corp.), where he held several important technical and management positions until his retirement 10 years ago. After his retirement he continued to serve Consolidated Paper Corp. in a consulting capacity.

"In 1926, Professor Keay was elected chairman of the technical section, Canadian Pulp and Paper Association, and was made an honorary life member in 1947. He also held memberships in the American Society of Mechanical Engineers, the Engineering Institute of Canada (past president), the Technical Association of the Pulp and Paper Industry, and the Corporation of Professional Engineers of Quebec. Professor Keay was renowned for the outstanding papers he presented in his delightful manner at technical meetings and for the keen contributions he made during discussions. Most important of all, the Prof was a welcome companion on any occasion. He and his work will be remembered with gratitude and appreciation.

"Prof. Keay, as he was affectionately known to hundreds of McGill graduates and other technical men in Canada, died of a heart attack in Sudbury (Canada) May 14, 1958, in his 83d year. He is survived by his wife, the former Grace Goodwin, and a married daughter, Dorothy (Mrs. Bruce) Stovel, now living in Sudbury."

Willard F. Jackson of Brockton died July 14, 1958, aged 83. He attended M.I.T. with us for two years, taking the Architecture Course. He was associated with the C. A. Batson Co., building contractors. He was former president of the Brockton Arts League and member of the Old Bridgewater Historical Society. He left a son, Robert C. of Lexington; and two daughters, Miss Helen Jackson of Brockton and Mrs. Gordon M. Lowell of West Bridgewater.

We were saddened last July by a letter from Paul Leon Price telling us of the death of his wife Roxanna. She was well known to many of us, as they both attended all of our reunions from 1930 to 1950 and in 1955. We will miss her in the future but hope that Paul will continue to join us.—ELBERT G. ALLEN, *Secretary*, 11 Richfield Road, West Newton 65, Mass.

I regret to say that much of the class notes for this month will be to report on the death of three classmates which has occurred since the last notes came out.

Ralph Robinson, V, who was one of our prominent and faithful members, died at his home in Fort Lauderdale, Fla., on June 19. He went to Schenectady, where one of his sons lives, last winter and was operated on there. Unfortunately the operation was too late. Although he returned to his Florida home, he died a few months later. He was a very loyal Tech man and was one of those who interviewed possible candidates for M.I.T. He was one of four 1901 men to work under Dr. W. C. Whitney of General Electric. The others were Howard Wood (from whom I got this information), Bill Arsem, and Fred Sexton. He leaves two sons and several grandchildren.

Harry F. Benson, II, died in Whitman, Mass., on June 30 after a long illness. He worked for the Taunton Locomotive Co., New York Edison, Lynn General Electric, Holyoke Worthington Pump Co., and National Fireworks. He retired in 1954. He is survived by his wife, a daughter, a grandson and a great-granddaughter.

William J. Newlin, II, died July 24. I quote from a newspaper clipping. "Professor Emeritus William J. Newlin, 79, a member of the Amherst College faculty since 1902, died at his summer home in Worthington, Mass. Professor Newlin, a graduate of Amherst, taught mathematics here before becoming a professor of philosophy in 1909. He was secretary of the faculty for many years. He retired in 1948. He did some writing and was editor of *Service with Fighting Men* published in 1921. He studied at Amherst, Oxford, and Harvard, where he received an M.A. in 1906. He received an S.B. from M.I.T. in 1901. During World War I he worked with the Y.M.C.A. and was chief of the government division of the Citizenship Department of the U. S. Army Educational Corps in France. In 1919-1920 he was director of the Serbian Relief Commission and received the Cross of St. Sara from Prince Regent Alexander." He was married twice, both of his wives having died. He leaves no survivors.

The following are from class replies received last spring. Frederic C. Ayers, XIII, Dearborn Hills, Mich., writes: "I don't think I have done anything outstanding since leaving Tech. I have been steadily employed full time from graduation to December 31, 1956, when I retired on a pension from the Truscon Steel Division of Republic Steel Corporation after 50 years of continuous service. Two years ago I sold my house in Detroit and bought a small house here near my daughter's home. I have a beautiful flower garden and enjoy working in it. Between the garden, helping my son with his business, collecting stamps, reading, television, and entertaining the grandchildren, I keep busy."

Waldo G. Wildes, I, Rochester, N.Y., sends the following: "As I write I am disposed to picture myself as one of the breed of the ever comic and amusing Dickens product of antiques in human flesh, although, at the moment, I am not amused, having developed a rash on one walking pendent which discommodes my progress through the world and which I hope will

not develop a permanent affliction for me. I grieve not to take a leadership, as I have in the past at times in M.I.T. activities in Rochester. Every success to 1901."

Keep in mind our reunion which comes next June. You will hear more about it later.—THEODORE H. TAFT, *Secretary*, Box 124, Jaffrey, N. H. WILLARD W. DOW, *Assistant Secretary*, 78 Elm Street, Cohasset, Mass.

1902

Our Class was represented at the Alumni Day luncheon by William N. Brown, Arthur L. Collier and Mrs. Collier, Lewis E. Moore, and Philbrick. Ambrose Bourneuf joined us for the banquet and Pops in the evening. The weather was perfect for the outdoors and tent affairs, although the wind blew rather gustily in the late afternoon and raised surf in the cocktail glasses. In the evening of the following Sunday, June 22, a reunion dinner was held at the Pioneer Restaurant in Boston to welcome John Marvin, who had driven on from Colorado but could not arrive in time for Alumni Day. Those present were Bourneuf, Collier and Mrs. Collier, Arthur Hall, Marvin, Moore, Patch, and Philbrick. After dinner we adjourned to Dan Patch's office and enjoyed views of the Mediterranean area projected from slides taken by Marvin on a recent trip. Dan supplemented the entertainment with some of his Hawaiian slides. It made a very pleasant get-together, but those who had attended the reunion at the Wentworth last year were saddened to learn from John that Mrs. Marvin had passed away in the early spring from a heart attack.

In April our classmate Edith A. Beckler was presented the Lemuel Shattuck Award by the Massachusetts Public Health Association. This award is presented annually by the Association to a person who has made in the past an outstanding contribution to public health in the New England area. The citation stated that Miss Beckler was the first laboratory person to receive this award. Dan Patch made a three weeks' trip to the Pacific Coast this summer and attended the Engineering Conference of T.A.P.P.I., the Technical Association of the Paper and Pulp Industry, at Portland, Ore. He writes: "I had a pleasant visit with Ernest MacNaughton, who as you know is chairman of the board of the First National Bank. Ernest has never been back to any of our reunions and his interest has been more in Reed College, of which he served for some time as president. Two of his sons are doing well in Hawaii and he has a goodly number of grandchildren. At Carmel I paid a visit to Lydia Weld, who is now quite a stamp collector. She appeared to be in good health and standing by the Scotty breed of dogs. Carmel is a peculiar place. The town has never allowed any sidewalks and consequently the post office will make no deliveries and all hands go to the office for their mail. In Vallejo, living just a few doors up the street from my brother, was Mrs. Hunt, widow of Howard N. Hunt, Course II. Mrs. Hunt attended a little party my brother's wife put on, and she brought her copy of the '02 Senior Portfolio with her and asked me about several of our men with whom Howard had been particularly familiar. Fortunately I could answer most of her questions, as many of his friends are also mine."

Dr. Samuel C. Lind is still active as consultant with the Union Carbide Nuclear Co. and is serving on the committee sponsoring the campaign to raise three million dollars for a new building for the American Chemical Society. Through a clipping from the *Lowell Sunday Sun* it is learned that Lloyd B. Haworth is still active in business, being associated with the F. L. Putnam and Co. brokerage firm. His hobby is baseball, particularly Lowell High baseball, and he has not missed a game at home or abroad for 15 years.

New addresses reported: Professor Philip R. Whitney, P. O. Box 314, Morlan, Pa.; William N. Brown, 242 Southern Artery, Quincy 69, Mass. We have just learned through the *Boston Herald* that Howard C. Turner died in New York on September 5. We hope to have more detailed information for later notes.—BURTON G. PHILBRICK, 18 Ocean Avenue, Salem, Mass.

1903

Our 55th reunion opened in the Vermont dining room of the Sloan Building, Saturday, June 14, at 6:30 P.M., with seven members and four wives present; five more were expected but were unable to attend.

Ike Atwood presided most acceptably and, after everyone had enjoyed a satisfying steak dinner, called on each one present for a brief account of his or her activities. The Secretary read, in part, the report of our 50th reunion and the group stood in silence for a moment in memory of Fred A. Eustis, deceased, our former secretary and treasurer. The result of the ballot for treasurer was announced, Augustus H. Eustis being unanimously elected. It was also voted that the Secretary should have authority to sign checks on the class account, should the need arise. Regrets were expressed that our new treasurer could not be present at this time on account of business engagements. An illuminated scroll of appreciation was tendered to Mrs. Fred A. Eustis, widow of our former treasurer.

We were then entertained by an account of a recent trip to South America that Ike and Mrs. Atwood made by air, visiting Chile, Peru, Argentina, Brazil, and other South American countries. Andrey Potter, Dean Emeritus of Purdue University, had also been to Brazil on a government educational mission and gave his impressions of conditions outside the United States. He is also active in the National Science Foundation; the Bituminous Coal Association; the Lafayette, Ind., Symphony Orchestra; and local dramatics.

Sophie Thayer Blunt related experiences in Braintree town meeting affairs in which she was able to bring about desired town betterments.

Robert King also keeps his hand in, in community affairs in Norwalk, Conn., and is a booster for M.I.T. Tyrrell Cheney keeps busy with the Wilton, Conn., planning commission.

Arthur Allen is active in local civic affairs and in keeping tabs on his grandchildren. Numerous community, fraternal, and men's church group activities keep your Secretary from easy-chair habits.

Three more classmates joined us at the Alumni luncheon, Monday: Tom Sears, Stanley Foster with his daughter, and John Nolan. We were all thrilled with the en-

couraging reports of Institute affairs by Dr. Stratton and Dr. Killian. An interesting tour of the new projects on the campus was announced, with the Alumni dinner and pops concert to wind up the day. Now for our 60th!

Following the reunion, your Secretary and Mrs. Gould took off for California to get reacquainted with two daughters and their families located in Claremont and San Gabriel, respectively. While in this area we had pleasant calls on Walter and Mrs. Adams, George and Mrs. Clapp, and Fred and Mrs. Crosby.

The *New York Times* of August 2 reports the death of Philip J. Kearny at a New Haven hospital July 31, age 75. Mr. Kearny was born in Newburgh, N. Y., December 8, 1882, the son of Captain George H. Kearny, U. S. Navy, and Isabella Smedberg Kearny. He was a descendant of General Stephen Watts Kearny, General Philip Kearney, and Commodore Lawrence Kearny. He received his preparatory education in Saint Johns College, Annapolis, Md., and was graduated with an S.B. degree in Course II from M.I.T. in 1903 and an S.M. degree in 1904. The *Times* account includes a biographical sketch as follows: "Mr. Kearny started his career with the Westinghouse Electric and Manufacturing Company in East Pittsburgh, Pa. From 1906 to 1910 he was with the New York, New Haven, and Hartford Railroad. He served as engineer in charge of electrification of the New York, Westchester, and Boston Railway for the next four years, and from 1914 to 1917 performed the same function for the New Haven Railroad. He also served in World War I as a captain of Army Ordnance, thereafter spending five years as manager in South China for Andersen, Meyer, and Co. He planned an electric tramway for Canton and the electrification of the Canton Shamshui Railroad. He also designed a steam-turbine power station and the electrification of Canton and suburbs. From 1924 to 1930 he was a consultant to United Electric Light and Power Company in New York. He leaves three sisters, Mrs. Osborne A. Day and Miss Isabel M. Kearny of this city and Mrs. James P. McClelland of Greenwich."

We are indebted to the *Needham Times* for the following concerning Charles Bartlett Moseley, XIII, who died May 9, 1958, at the Glover Memorial Hospital. Mr. Moseley, who was born in Needham, the son of John and N. Maria (Bartlett) Moseley, was a member of a family prominent here for many years. He was graduated from Needham High School and from Brown University. At Brown his fraternity was Phi Delta Theta. He also attended graduate school at M.I.T., where he studied naval architecture. For many years he was president of Moseley and Company, the business founded by his father in 1881. During World War II, he was employed with the order department of the Bethlehem Steel Co. at Fore River and later with the finished products department until his retirement. Besides his wife, Lilyan (Lake) Moseley, he is survived by a son, Edwin B. Moseley, of Colrain, and a granddaughter, Miss Phyllis Ann Moseley, also of Colrain."

Clarence Joyce writes from Ostende that he and Mrs. Joyce have been visiting the Fair, which he says "Tops them all," espe-

cially the U. S. Pavilion, most attractive of all viewed. The theatre, designed by Edward Stone '27 of M.I.T. along the lines of Kresge Auditorium, is a masterpiece. He hopes it will be taken over by the Belgian government after the Fair. He expects to visit Luxembourg and Lucerne before returning to the U. S.—AUGUSTUS H. EUSTIS, *Treasurer*, 131 State Street, Boston, Mass., LEROY B. GOULD, *Secretary*, 36 Oxford Road, Newton Centre 59, Mass.

1904

When we wrote the notes for the July Review we wished you all a pleasant summer, so as we try to collect a few items to start the new volume we express the hope that our wish became true.

First item of interest must of course be Alumni Day. The weather was fair but a little on the windy side. Some of the old gray heads shown in the picture on page 464 of the July Review belonged to the '04 contingent, but since only the backs are shown you wouldn't recognize them. Those present were Mr. and Mrs. Bouscaren, Dan Comstock, Mr. and Mrs. Myron Dole, Charlie Haynes, Mr. and Mrs. Hayward, Mr. and Mrs. Holcombe, Mr. and Mrs. Lang, and Arthur Smith. All these attended the luncheon and part of them enjoyed other features such as the symposium in the morning and laboratory inspections in the afternoon and the dinner and pops concert in the evening. Harry and Glendora Rollins were in Boston a few days before Alumni Day but couldn't stay over. They told us of some of the high lights of their world cruise some months ago. It sounded very interesting but rather strenuous.

After Alumni Day the Holcombes visited the Langs at their Norwalk, Conn., home. Charlie Haynes joined the group one day for a game of golf. It is the good fortune of some men to build themselves into the life of their communities outside the political field. Some of these get little but criticism for their efforts, but Currier Lang has used some of the traits shown as chief marshal of our Class at graduation to accomplish some outstanding things in his home town of Norwalk, Conn., which have been rewarded by general appreciation. His work as chairman of the Citizens Action Committee and previously of the hospital board have been mentioned in these notes before. Now the Chamber of Commerce has presented him with their Achievement Award. One of the reasons for giving Currier this honor "was because of his effort to unite the city. In this he was able to bring together many factions including old timers, newcomers, those who worked locally and those who commuted, with the one aim of improving Norwalk." The result has been that "even the critics and skeptics have been convinced of the worth of the Citizens Action Committee." The report in the *Norwalk Hour* gives much more about the operations of our classmate, but to a considerable extent we have mentioned them in a previous edition of these notes. The Class joins the Norwalk Chamber of Commerce in congratulating our Chief Marshal.

Bernie Blum made the headlines in St. Paul, Minn., last June because of his appointment to assist in reorganizing the railroad system of Thailand. The job is expected to take six months. Mrs. Blum goes to

Bankok with Bernie, and they expect to return via Europe. After 46 years with the Northern Pacific Railway, this job should be duck soup to our classmate. We hope the Blums enjoy the experience.

Probably few of you ever heard of Hosea Ballou but many years ago he was a well-known Universalist minister and was frequently called the father of Universalism in America. The reason for mentioning him here is that the summer home of our late classmate Shorty Holbrook was on the site of Ballou's birthplace near Richmond, N. H. At a recent celebration in honor of Ballou, in the Community Church in Richmond, Mrs. Holbrook presented a tablet in memory of this famous preacher. In the course of his career he occupied a Boston pulpit for 35 years.

The following item from the *New York Herald Tribune* under date line Pelham Manor, N. Y., June 8, tells of the passing of another classmate: "David Elwell, 75, Vice-president and Director of Lockwood Greene Engineers, Inc., 41 East 42d Street, New York City, died today at his home at Whitherbee Court. Born in Boston, Mr. Elwell was graduated from M.I.T. in 1904. He was a member of Delta Kappa Epsilon and the Larchmont Shore Club. Surviving are his wife, Mrs. Mildred Kellock Elwell, and a son, David K. Elwell."

May we remind you again that our 55th anniversary is next year and we must decide soon how we are to celebrate. Please give the matter some thought, then take pen in hand and write your suggestions to us. The more suggestions we get the easier it will be to please the majority.—EUGENE H. RUSSELL, JR., *Treasurer*, 82 Devonshire Street, Boston 9, Mass. CARLE R. HAYWARD, *President and Acting Secretary*, Room 35-304, M.I.T., Cambridge 39, Mass.

1905

What a grand turnout we had for Alumni Day—total 25. And what a grand day and program. Present were Chesterman, Cronkhite, Files, Fisher, Helpert, Nye, and Stevenson with their wives. Unaccompanied were Charlesworth, Hadley, Joslin, Kenway, McLean, Smart, Tower and Balkam. Also your Secretary and Ruth and daughter, Lucy. Our representation was, as usual, than that of any class (with the exception of five and ten year classes) within 10 years of our graduation either way. And did you notice that the cover of the July Review was dedicated to '05? Look again and you will note in the center foreground "full back" Chesterman playing center. Your Secretary is at his left (aqua on the rocks in his left hand, but hidden), next on the left a profile view of Bob McLean. On Chesterman's right is Charlesworth (of course) with Smart bending over him. Just behind (or in front of) Chesterman are the beautiful ladies. Quite a compliment to the Class. Charlesworth comments: "However, they [the ladies] were with us, which is the important thing." Speaking of class reunions, our 55th will be along in a bit over a year and a half, so save up some money and some time in June, 1960, for another one of those heartening and chummy get-togethers.

President Kenway shortly after Alumni Day took one of his famous trips, this time to Ireland. His account of the trip is so interesting I copy as follows: "I made my

fourth trip to Ireland in June, this time with John Hession, M.I.T. '13, of National Gunite Corporation. We had expected to make it a drive-yourself trip but found that is not permitted in Ireland after you are 70. You'd better warn the Class about that before it's too late. We made a complete circuit from Limerick on the west to Galway, Bundoran, Belfast, Dublin, Cork, Bantry, Killarney and way stations, in care of an Irish driver who was a poet, historian, tenor, and could speak the Gaelic tongue and advise about John Jameson. We combined with the journey a trace of business, and a thoroughly enjoyable and profitable trip was had. The Harlan and Wolf shipyard at Belfast is astounding in size and activity, and the textile mills of northern Ireland are fully and beautifully equipped with the most modern machinery. We found the fireworks of the outlawed Irish Republican Army had no support or sympathy from any but the lunatic fringe. Make a circuit of County Kerry when you can and you'll be surprised to see the palm trees that flourish in the south of Ireland." Don't ask who John Jameson is. I did on one of his previous trips and was immediately reminded that my education had been neglected.

Willard Simpson is one of our best contributors, as you have often noted. In explaining why he found it impossible to be with us on Alumni Day, he adds this bit of personal news: "Besides, you know, we have a beautiful summer place at Boerne, Texas, just 31 miles north of here but 10 degrees cooler any hour of the day, where we go on the first of June to spend the summer. We are making all arrangements to go there now. One of these annual pilgrimages to our place in Boerne means lots of work to me repairing plumbing and repairing water lines and putting in new pumps and getting the swimming pool clean and all of these things that take local labor. It's a very poor condition in this little town that it is almost impossible to get anyone to work on our place, so we have to send to San Antonio for everything. Consequently, I have every conceivable tool on the place to do the work myself. This is always enjoyable to me; however, it takes up some of the time that I might enjoy the place more—just loafing. I built the place, which includes a very fine cottage for Mary and me and another little guest house for my son and his family and our three grandchildren. I built the house originally for my children, and now we are there keeping it up for our grandchildren. Strange to say that we haven't had use for the swimming pool yet because down back of the house, in the creek that runs through the place, the water is just gushing, fresh and clear. There is where the kids all want to go to swim. You know none of us down here like to swim in confined swimming pools. We like to swim in creeks or rivers, out in the open. I see our grandchildren have the same tendency. Sunday, we were down there. I was enjoying a swim along with the grandchildren, while my son and some of his friends were enjoying fishing up the stream a little piece where they could catch black bass perch and different kinds of fish. I am not a fisherman, so that stuff doesn't appeal to me so much. My desire is hunting big game in the fall out in the brisk, cold, open air."

If space permitted I'd like to copy the entire clipping from the *Falmouth* (Mass.) *Enterprise* of Friday, June 20, 1958, covering the 50th wedding anniversary of Prince and Ethel Crowell. At the risk of deletion by the editor I am quoting excerpts from the clipping: "Mr. Crowell was for 25 years superintendent of Enterprise Dye Works and Finishing Co. of Woonsocket, R. I. They spent every summer in Woods Hole; and three years ago when he retired, they came to live the year around. After his graduation from M.I.T. Mr. Crowell worked for Farben-fabriken von Elberfeld in Boston. Until World War I, the Germans held the secrets of industrial dyeing. When the war came Americans, cut off by blockade from Germany, depended on the products of struggling companies new in the field. Mr. Crowell remembers before this country entered the war how his firm received a shipment of dye stuff from Germany, brought by a submarine that ran the Allied blockade.

"Mrs. Crowell was one of the first to take up bird banding. Since 1923, with the help of her family, she has banded 36,000 birds. Farthest report she ever had was from the upper Amazon, where a tern she banded was found. Most of the tern banding has been on the Weepecquets, Ram Island in Buzzards Bay, Muskeget off Nantucket. Small birds have been banded around their home. Many have been noted returning year after year, some as many as seven years in a row. A song sparrow which they recently banded was observed to have been banded every year for four years. Mr. Crowell's hobby is boats, racing sailboats. For more than 20 years he has been a member of Woods Hole Yacht Club and one of its governors. They have somewhat restricted their activities. He is a vestryman of Church of the Messiah, a member of the Masonic Lodge and Falmouth Rotary Club. Mrs. Crowell is a member of the Garden Club. Both have been members of Natick Shakespeare Club since their marriage and still go there for meetings." Andy Fisher attended the Anniversary celebration and according to him it was "the most in about everything," including the eats. Wonder if they let Andy make his famous quahog chowder.

Incidentally, Andy comments (very frequently) on the quality of our class notes. For instance: "You may have hit on a scheme for stimulating replies to your muddled class notes. In one paragraph you speak of Ben Lindsay's first great-grandchild wondering if he is first; then you tell of how many the late Charlie Leavitt had." I plead guilty to one more method of stimulating interest under the guise of editorial liberty, but it didn't work. Nobody but Andy bothered to call my attention to the *faux pas*. Dez Schonthal writes very briefly from Huntington, W. Va.: "I'm going on 78, am in fine health and enjoying life. So is Mrs. Schonthal, who sends regards." Court and Mrs. Babcock missed out on Alumni Day. They were in New Haven attending Court's 55th at Yale.

Ted Moorehead writes: "I sold my house and we are planning a trip abroad, leaving here on July 27. Destination New Zealand and Australia. Thence around the world. Will be gone over a year." Among those attending and participating in the summer general meeting and air transportation conference of the American Institute of Electrical Engineers, June 22 to 27, 1958, in Buf-

falo, N. Y., was John F. H. Douglas, VI, from Marquette University, who gave two papers: "Temperature of Conducting Ribbon Magnet Coils" and "Synchronous Performance of Reluctance Motors by Improved Circle Diagrams."

Another travel tour to report. I quote from Gilbert Tower's letter of August 27, 1958: "The Towers are going abroad. Elizabeth and I expect to sail from Montreal on September 5 on *Ivernia* for Le Havre, Paris, Nice, Genoa, Rome, Florence, Venice, Milan, Lucerne, Wiesbaden, Coblenz, Amsterdam, Brussels, London and around England. That is the popular route for American tourists. Return via *Saxonia* to arrive in Montreal October 29. The original idea was to look around London and England, but Elizabeth wanted to take in Paris so we bought a Cook's tour for a quick whirl around on the Continent, which will give us one, two, or three days in the principal cities. When we get to England we will wait over two weeks for the next boat, which will give us time to see more of London, look up some friends, and possibly take an auto trip. Can also report that I have been asked to hang on another year at the Navy office in Quincy. Am planning to do so. Also can mention that our 10th grandchild was born in May. Our daughter, Frances Maroni in Falls Church, Va., had her third child, a second boy. Total six boys and four girls."

Gilbert also reports in regard to Clayton M. Simmers, XIII-A: "In the Alumni Register, Clayton M. Simmers, Course XIII-A, Captain U. S. Navy retired, is listed as Class of 1905 although he has never taken any interest in the Class. He was an Annapolis graduate who had some sea duty in the Navy and then came to Tech for the post graduate course in Naval Construction with Captain Hovgaard. I have had contacts with Captain Simmers during the last 53 years and still see him every year. He is now retired and lives in Washington with his wife, who is not in good health. He comes up to Boston occasionally to see his son, Richard, who is an investment counsellor with Scudder, Stevens, and Clark. Captain Simmers had an active career as a Naval constructor at various Naval and private shipyards and with the Bureau of Ships in Washington. He is still in good health, but like all of us is getting older all the time. His diversion now is golf."

Percy A. Goodale played for the 35th year in the annual father and son golf tournament at Winchester, Mass. This June, first with son Bob, and then with grandson Richie. They won the grandfather-grandson match. Just to prove that someone besides Andy notices mistakes in my notes, Bertrand L. Johnson, III, reminds me of two mistakes in the January, 1958 issue, which I gladly correct. First, his son B.L.J., Jr., is working at the Naval Research Laboratory (not Nyal); secondly, the title of his latest Bureau of Mines paper is "Potassium-bearing mineral resources of Oceania" (not oceans).

Many, many times have I tried to get some word from one of our Japanese classmates. Finally I got through to Katsuzo Tsuruta—remember he represented M.I.T. in the good old days when bicycle riding was considered an amateur college sport? The letter of July 19, 1958, was one of about a dozen I wrote to different addresses. I quote: "I was delighted to receive your letter dated May 29, 1958. I am happy to

know that everything goes well with you. I am a retired man now living in Kamakura with my wife. Our house is located near the ocean. It is quiet during the winter, but during the summer it is quite gay with many people from the big cities. I have many daughters and sons and many, many grandchildren. They come to visit us now and then and keep us cheerful and busy. I also go golfing. There is a good place to golf about an hour from here. It keeps me in good exercise. I and my wife are enjoying life here in the little town of Kamakura. Although it is a small town it is famous for its various old temples."

Probably the most difficult reporting of my whole experience as class secretary is that of the death of Grosvenor D. W. Marcy on July 8, 1958. Grove and Hub and Bill Spalding and I had a glorious reunion at Bill Spalding's summer place at Conway, N. H., last October. None of us had any idea that within a few months doctors on an annual physical check up were to find a malignancy, which in a few short months would lay low one of the finest friends I have ever known. Hub was with him at his home a great deal of the time during the last stages of Grove's sickness, a very harrowing experience. Several of us attended a memorial service at the Newton Cemetery Chapel, Hub, Andy Fisher, Al Prescott and wife, Henry Buff, and Mrs. Goldthwait and myself. It would be idle to try to write the story of Grove's life, but I will cite some facts. Grover retired as president of Sampson and Murdock Co., Boston city directory publishers, in 1943. He had been president also of Price and Lee, city directory publishers in Connecticut. He was also secretary of the Southern Building and Transmission Co., an active member for many years of Norumbega Council of Boy Scouts. In World War I he served as captain of the Army general staff in Washington. He was secretary of the Class of 1905 from 1907 to 1922. He was all of these and many more. We will sadly miss him.—FRED W. GOLDTHWAIT, *Secretary*, 274 Franklin Street, Boston 10, Mass. GILBERT S. TOWER, *Assistant Secretary*, 35 North Main Street, Cohasset, Mass.

1906

Only a few of the regulars attended Alumni Day doings. At luncheon were the Kidders, Coeys, Hinckleys, Rowses, Bill Abbot, and Charlie Kasson with a guest. Alma left after lunch to visit in Cambridge, so Marion and I wandered around with the Coeys until they left for Squirrel Island. Abe and Sadie Sherman arrived in time to join us before dinner. Kresge was packed for the Boston Pops concert and the pianist, Miss Maro Ajemian, was as superb as Miss Tana Bowden a year ago. It was nice to have the Shermans with us again; Abe said he was feeling fine, and looked it. For some years they have been spending the winter in Florida, where Sadie has been collecting sea shells and now has 18 trays, I believe. Quite an exhibit!

In the March notes you read that our retired class president Harold Coes had recovered from an operation some months before. However, in May we learned that he was in the hospital again so were much relieved when he wrote us late in June thanking us for a card and note, and adding: "I

have been home now for several weeks and think I will be back to normal soon. Had a rump '06 meeting a while ago when Coey and his wife and Kendall and his wife were here one evening."

Golden weddings will probably make news from now on, and here is one that the *Lawrence (Mass.) Tribune* heard about. To quote: "Mr. and Mrs. Allyn C. Taylor of Wyomissing, Pa., celebrated their golden wedding anniversary at the home of a son, Azard W. Taylor, in Villanova. The couple, both natives of this city, were married here on June 16, 1908. Mrs. Taylor is the former Florence E. Welton. Before his retirement in 1956, Mr. Taylor was president of the old Consumer Gas Co. and later a vice-president of the United Gas Improvement Co. of Philadelphia.... The Taylors have three other children: Mrs. Frederick W. Lantz of Lincoln Park; Allyn Chandler, Jr., of Hartford, Conn.; and Mrs. Robert H. Cook of Hohokus, N. J. They have 11 grandchildren." Allyn should know a lot about the gas business, having been connected with it in various capacities successively in Philadelphia; Harrisburg; Charleston, S. C.; Allentown; and for years in Reading, Pa. Through the years he has been one of the most loyal, active, and interested men in the Class.

Many of the Class have written for publication, but few would be called authors like Charles Lyman Anson, XIII, whose latest book, *Skeleton Coast* (Dodd, Mead) is described by one reviewer as "...one of the most absorbing, tension-strung stories of the year." Some of the Class could easily write a book about their travels, the Hoefers for instance. In August we had a post card from Moscow, so Chester may have some interesting tales for the midwinter meeting. Another card came in May from Bertha and Sherman Chase from London. I talked with Sherm a few days ago and he said they had had a very successful and interesting trip, spent a week at Palermo and in the Balearic Isles, and returned home in July. As usual he shot a lot of film, and we hope to see the pictures soon and get more details about their doings.

The July notes contained an account of Dick McKay's successful career and particularly his devoted service to his community in the many civic and religious organizations and activities in which he was a moving spirit and of which he was an ardent patron. So it is with much feeling and deep regret that we now record his death on July 25 at Mercy Hospital in Dubuque. Through the kind thoughtfulness of his long-time friend and business associate, J. Merrill Burch, Jr., '08, I received a prompt notice and clipping of the full obituary column headed "R. V. McKay, Civic Leader, Is Dead at 73." Much of that column concerning his career and civic activities was as contained in the class notes, but we didn't include all of them. To quote: "His death marked the end of long service to Dubuque through work in city government, commerce, and charitable groups.... He was past president of the Chamber of Commerce and served on its industrial expansion committee. He belonged to Rotary, Elks, Knights of Columbus, and was on the original board of the Community Chest. He was an original member of, and secretary to, the planning and zoning commission; secretary and on the board of directors of the

Church of the Nativity; secretary to Sunnyside Sanatorium and on its board of directors; and was regional secretary of the M.I.T. Educational Council." The youngest son, Thomas, in a letter to D. Hugh Darden, Executive Secretary of the Educational Council, said in part: "My father was justly proud of his association with M.I.T. and saw fit to remember the Institute in his will." Having served as one of the honorary secretaries from 1937 and as regional chairman of the E.C. from 1954, no one can doubt his passionate devotion and loyalty to his alma mater. As I said in a letter of condolence to son James: "It's not so much how long a man lives but the use he makes of his allotted years, and his sons can be proud of the way that Dick McKay used his."

In the February notes we included an account of Sherley Newton's career. On June 21 he died suddenly at their summer place in Wells, Maine. The *Needham Chronicle* carried the following: "Born in Shelburne Falls, Mass. [December 26, 1884, in Charlemont] he was graduated from M.I.T. in 1906 [Course V] and joined the Sherwin Williams Co. as chief chemist, where he worked until his retirement in 1946. During this time he became director of manufacturing, Canadian Division, and served as president of several scientific societies in Montreal. He gave technical assistance to the government at Ottawa and served as chairman of an advisory group during World War II. He was a member of the Hayden Lodge of Brookfield, Mass., and a member of the Unitarian Church." Sherley prepared at Drury High School in North Adams and was a member of the Chemical Society, Civic Club, Chess Club (and on the team), and the Cross Country Association. His thesis was: "The use of Alpha Naphthol Sulphonic Acid in Determining Nitrates in Water." His daughter, Mrs. Joyce E. Warner, telephoned me to say that Mrs. Newton would be pleased to have me attend the private service at Pitnam Chapel, Forest Hills; and Marion and I did so.

Here are a few address changes for your class directory: Frank Benham, I, is now at 276 Massachusetts Avenue, Arlington 74; Miss Frances P. Webster, VII, at 1842 Beacon Street, Brookline 46; Charles H. Chase, II, at 44 Center Street, Glenbrook, Conn.; Ralph C. Thayer, III, at 3927 1/2 Centre Street, San Diego 3, Calif.; Stanley Martin Udale, II, c/o Miss Blair Udale, 1517 Tully Road, Modesto, Calif.; and Edwin B. Bartlett, VI, at 705 West Bradley Road, Milwaukee 17.

Marion and I spent a few days on the Maine coast in the Kennebunk area, where we did NOT go in the water; had a trip to Cape Cod, where we DID; and a day in Newport where we saw, in the distance, the last race to select a cup defender; saw *Vim* and *Columbia* make their moorings in the harbor; and think the helicopter we saw take off from Ft. Adams was starting the President toward Washington—all very exciting!

Compensation of a sort, and much satisfaction, come to class officers in various ways—letters and post cards from classmates and attendance at reunions, Alumni days, midwinter meetings, council meetings, and conferences. The Alumni Fund Conference in mid-September, for instance, was the source of much real inspiration. During that two days about 175 delegates from all

over and 25 staff members, Alumni Association officers, and Review staff attended panel discussions, work sessions, talks, and bull sessions on campus—an excellent program planned by the Fund Board in minute detail. Your class president and secretary were there and regretted that unavoidable conflicts prevented our class agent from being with us. I am sure that if all of you could have attended that conference '06 participation in the '58-'59 Fund would push up hard toward 100 per cent. Let's shoot for it anyway. Will YOU help?—EDWARD B. ROWE, *Secretary*, 11 Cushing Road, Wellesley Hills 81, Mass.

1907

On last May 28 nine '07 men gathered at M.I.T. Faculty Club for dinner and a fine social evening. Those present were Dick Ashenden, Paul Cumings, Tom Gould, Harry Moody, Bill Coffin, Allston Thorn-dike, Stanley Wires, Phil Walker, and Bryant Nichols. Our guest and speaker was Dr. Harold L. Hazen, M.I.T. '24, Dean of the Graduate School at Tech, using the topic: "An Engineer visits Engineers in the Persian Gulf Oil Country." Professor Hazen had made an extended trip through that territory during last winter and spring, and he gave us a most interesting and informative talk, using colored slides made from photographs that he had personally taken.

On June 16, M.I.T. Alumni Day, the following classmates were present at either the luncheon or evening banquet and concert, or both: Bill Coffin; Louis Freedman; Wheaton Griffin and his wife from Utica, N. Y.; Ralph Hudson and his wife; Don Robbins; Phil Walker and his wife; and Bryant Nichols and his wife. It was especially delightful to see Wheaton Griffin, as it has been a long time since he has attended any event where other '07 men were present; and moreover, it was only about a year and a half ago that he was seriously ill. On June 30 Wheaton wrote to me, in part, as follows: "The day after the Alumni Day we went to Bass River on Cape Cod for a few days and then to Falmouth and Martha's Vineyard. We had a grand afternoon and evening with Mr. and Mrs. Bill Otis at South Chatham. We also called on Mrs. Bill Woodward at South Yarmouth, whom we had not seen since Bill left us. When we went through Woods Hole we called on Mr. and Mrs. George Griffin and had a delightful visit. They had just had their 50th wedding anniversary three days before, and Phil Walker, who was George's best man at the wedding, with his wife, had been there for the party. The only other '07 man I have seen in years is Earl Reed of Chicago, who stopped in Utica for a few days last February. He is chairman of the committee of the American Institute of Architects for the preservation of historic buildings. He has changed in appearance but very little since our Tech days."

Early in June I received from Hugh Pastoriza a thoughtful letter from which I quote: "I just took a turn around the western half of the country with a bunch of Wall-streeters and thought it would be fun to call up the 1907 men along the way. Following is some information that I secured: Joe Baker in Chicago reported that he was in good health, semiretired, putting in his time in the management of rental property. He seemed doubtful about getting to our 1959 reunion. Jim Barker sounded like his usual

jovial self. He was just off to a meeting so I did not get to see him, and he had another at some remote point on May 30 when I got back to Chicago. He hopes to make the 1959 reunion. John Frank sounded as chipper as ever over the phone. He is now officially retired, although he is still chairman of the board of Ilg Electric Ventilating Co. He puts in his time reading and consulting and traveling.

"Jim Gaylord in Los Angeles retired from the Board of Water Supply there eight years ago. He now does consulting work. He has a daughter and a son, the latter working for Borg-Warner. Albert Greene in Seattle has apparently given up his office but said that he was still busy selling electric furnaces. He reported that his health was good but he won't see us at the 1959 reunion. Most of the men on the Pacific Coast seem to feel that Boston is as remote as China. Fred Menner in Santa Barbara I did not get to talk to directly, but I had a short chat with his wife. He retired from his work as a consulting engineer some 10 years ago and now spends his time running his orchard. He is troubled with arthritis and unlikely to attend the 1959 reunion. Sam Marx in Chicago I was also unable to talk with directly. His secretary told me that he was in much better health. Andrew Rebori, also in Chicago, is busy up to his ears practicing architecture. He is carrying the torch for individualism and gave me a short pep talk on the subject. Earl Reed, Chicago, said he spent years teaching and in consulting work. [See statement about him in the letter from Wheaton Griffin, above.—B.N.] Herbert Sullwold, Los Angeles, reported in class list of November, 1957, as with Hughes Aircraft, actually retired in 1955. I finally located him at his home, but got no particular news from him. Merton Sage is a neighbor of mine and I see him so frequently that I don't think of him as news. However, he and his wife just returned from a round-the-world cruise on the *Caronia*; and, as if that were not enough, this is the fourth time that they have made that cruise." My public and sincere thanks to Hugh for his serving as such a fine ambassador for '07 and for his thoughtful report.

John Frank wrote to me on June 9: "Have just seen the June Review. Your statement that Sam Marx and I attended our 55th at Exeter is O.K. We were there the week end of May 23 and, as usual, Molly Scharff (M.I.T. '09) joined us. Only nine classmates were back, but it was interesting. Mrs. Frank and I are planning to go to Europe in September—Germany, Austria, Switzerland this time." As of last June 5, Clarence Howe's home address became Mountain Place, 3468 Drummond Street, Montreal 25, Province of Quebec, Canada, and his office is at Room 72, Canada Steamships Building, Victoria Square, in Montreal. On June 24 Clarence wrote to me: "I am now well settled in my years of retirement with plenty to occupy my mind. As you know, I am at the moment a member of the Executive Committee of the Corporation of M.I.T., and also chancellor of Dalhousie University in Halifax. The latter is more or less an honorary job, but still takes considerable time. I am also a director of about a dozen companies, which gives me a contact with Canadian business. This is the first year in several that I have not found time to take a holiday. Although I was defeated in the general election of

1957, this turned out to be the reverse of a calamity. I am now convinced that I escaped from political life just in time. I attended M.I.T. graduation exercises recently but did not meet any '07 men." A release from the office of the president of M.I.T. dated July 10, 1958, states that Clarence has been elected a life member of the M.I.T. Corporation. He had been an Alumni term member since 1953.

Your Secretary and Mrs. Nichols became great-grandparents on last July 15 when the oldest of our eight grandchildren became the mother of a son. In a note to our classmate Frank MacGregor I mentioned this fact, and in Frank's reply he wrote: "Now I am a grandfather, by proxy, so to speak. Mrs. MacGregor's son's wife had her first child, a girl, and we went to New York to attend the Sunday christening. Imagine an old bachelor like me having a snapshot taken holding an infant in my arms! Closest I had ever been to one!" Milton MacGregor still maintains his very enthusiastic and active interest in mountain climbing and in out-of-door life. In the June, 1958, issue of a 144-page booklet, *Appalachia*, published by the Appalachian Mountain Club, is a very interesting article by our classmate entitled "Snapshots of Wildlife," that describes some of his own experiences while camping. In a letter to the editor of the *Boston Herald* published in that paper on September 4, 1958, he tells of a trip that he had recently made in his 74th year, when he completed the climbing of all peaks in New Hampshire that are 4,000 feet, or over, high. On the first day he did 9.2 miles of trail, while climbing; on the second day 12 plus miles; on the third day, 11 plus miles; on the fourth day, 5 plus miles; on the next day, 9.5 miles. Our congratulations to Mac on his having the physical strength and know-how to accomplish this feat. Last May he wrote to me a long letter telling of his doings in various walks of life since 1907. I'd like to publish it all, but there isn't room in these notes. If all '07 men would follow Mac's example, what a supply of information for Review notes I would have!

A note received from Ernest Miner last June tells of his being in good health and his continuing to live by himself in a small frame house that he built himself, with address Route #1, Box 387, Punta Gorda, Fla. He extends his invitation to any '07 man to call on him. Erskine P. (Tuckie) Noyes wrote to me last August saying that after having lived at the same place in Augusta, Maine, for 38 years, he moved in June of 1958 to Kelley Road, Falmouth Foreside, Route 99, Portland, Maine. He has developed an activity that started as a hobby 10 years ago into a full-time small business. He makes family coats of arms. If any of you '07 men (or other readers of these notes) are interested, Tuckie will be happy to hear from you.

In the *Boston Herald* of June 8, 1958, appeared a picture of Phelps N. Swett, Jr., son of our classmate, with the statement that he had been re-elected to his second term as national president of the Alumni Association of Middlebury College of Middlebury, Vermont. Upon seeing this news item, I wrote to our Phelps, who is president of the National Bank of Middlebury asking him for information regarding his children. He wrote me, thanking me for telling him of the *Herald* picture of his son, about which he had not previously known. This son lives in

Burlington, Vt., with his wife and four children, and has been with Sears, Roebuck, and Co. ever since his graduation from Middlebury College in 1934. He is operations manager in the store there. Phelps's son Malcolm, married, lives in Fairfield, Conn., where he is an instructor in mathematics at the Roger Ludlow High School. The third son, Donald, lives in South Orange, N. J., and has been with Sun Oil Company since 1938, except for the war years. He is married and has two children. He works in the merchandising department for the New York area of Sun Oil. Phelps's daughter, Eleanor, lives with her husband and four children in Hamilton, N. Y. Ed Walter, her husband, is a salesman for General Electric Company in the plastic division.

Through the courtesy of Tuckie Noyes I received, in August, a clipping from the *Phoenix (Ariz.) Gazette* and a note that Mrs. John E. Tresnon had written to Tuckie, both telling of the death of John, our classmate, on July 16, 1958. John had been in poor health for a long time. He was a graduate in the Course in Electrical Engineering and was employed professionally until 1914 when he returned to England, where he was born and where he prepared for Tech, and enlisted in the British Army, working "for Lloyd George and King George" as he expressed it in one of his messages to me, until 1919. He was gassed and never fully recovered from the effects. His health condition made it necessary for him to go to Arizona in 1920, and for 24 years he was an electrical engineer for the Salt River Water Users Association, retiring from active work in 1944. He was a loyal '07 man and always maintained a lively interest in M.I.T. Funeral services were held in Central Methodist Church at Phoenix, Ariz., of which he was a member. He is survived by his wife, Ada, at 306 West Cypress Street in Phoenix; and by two children, Betty, who is Mrs. Farmol Francis of Los Angeles, and Bill, who lives in San Francisco; and by seven grandchildren. In behalf of our Class I wrote a letter of sympathy to Mrs. Tresnon.

Remember that we have the dates June 12 to 14, 1959, all set at Oyster Harbors Club for our 52 year reunion. Mark those dates on your 1959 calendar and hold them for '07.—BRYANT NICHOLS, *President* and *Secretary*, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, *Assistant Secretary* and *Treasurer*, 18 Summit Street, Whitinsville, Mass.

1908

We celebrated our 50th June 13 through 16. It began with our attendance at 1958's commencement in Rockwell on Friday morning, June 13, at 10:30 A.M. 33 of us, in caps and gowns, marched in the academic procession and had seats on the platform. Several classmates who had decided against marching in our parade were seated in the section reserved for 1908 guests, where they squirmed our ladies. Following the awarding of degrees we marched out in good order, quickly shed our gowns, and adjourned to Du Pont Court for the president's luncheon, the second event of our celebration. The luncheon was delicious and most welcome after our strenuous activity of the morning. It was nice to have table service, too, which we now rate as "Old Grads."

Fortunately the several speakers were brief, so we were able to start for Harwichport on the Cape fairly early for the third event of our celebration, our 50th at Snow Inn. Harry Rapelye was on hand to greet us in our cocktail lounge in the Captain's House and proved to be a most genial host. We now had the opportunity to meet our lady guests.

After suitable libations to the superiority of the Class of 1908, we moved on to dinner in the Main House. The class of 1928 of Northeastern was holding their 30th at Snow Inn; and as we had met them there five years ago, they seemed like old friends. During the course of dinner they saluted us with friendly greetings in a poem, to which our poet laureate, George Schobinger, replied in a most fitting manner.

Replete with good food, we moved on to the music room for our usual song fest. With Dick Collins at the piano and Harry Rapelye as choirmaster, and an ample supply of beer for dry throats, the show was on. It had begun to rain, so it seemed wise to stay inside. We sang the usual Tech songs and the popular songs of our era better than ever. After some persuasion, Harry Rapelye sang "Alouette" to Mrs. Thompson, Sr., most effectively. As usual Mrs. Thompson, Jr., helped to "keep the ball rolling." In spite of our outburst of melody, the Schobingers and the Taylors continued calmly playing contract in an adjoining lounge. We finally arrived at "Good Night Ladies," and so to bed.

Saturday morning was clear and cool, as the storm of the night before had blown itself out. After a wonderful breakfast, several golfers—Belcher, Booth, Luther, Osborne, Schobinger, and Spiehler—drove to Eastward Ho as guests of Luther to try their skill or luck. No scores were reported, so the "hand-painted cuspidor" was not awarded. Less active golfers settled for clock golf on the lawn at the Inn. The ladies enjoyed an auto tour of the Cape, as several of the girls offered their cars and served as chauffeurs and guides. Some went as far as Provincetown and visited some auctions. After a bountiful lunch, we posed for our class picture. (See page 24 of this Review.) The afternoon was spent relaxing, napping, or talking over old times.

We had been invited, with the class of 1928 Northeastern, by the Thompsons to help christen their new beach club at a cocktail party about 5:00 P.M. So we were all on deck at that time. The buffet was superb—in addition to the usual hors d'oeuvres, they served fresh opened Little Neck clams and cold boiled chicken lobsters. After such a layout we didn't need any dinner, but we all showed up in the dining room and managed to put away quite a meal. After dinner Joe Wattles showed some fine pictures taken at our 35th at the Oyster Harbors Club; at our 1950 party at Henry Sewell's in Norwell and at our 1951 party at Joe Wattles' in Canton; at our 45th at Snow Inn; at Alumni Day 1956; at our 49th at Melrose Inn, Harwichport. He then ran a picture quiz: 30 pictures of well-known places of the world. Mrs. Osborne won first prize for ladies, and Edgar Williams for men. Consolation prizes were won by Mrs. Ellis for ladies and Bill Medlicott for men. Joe also showed some very fine pictures taken on his and Eudora's trip to the Rotary International Convention in Lucerne in 1957. After such a full day, we

were ready to retire reasonably early at night.

Sunday morning promised another perfect day. A foursome of golfers were away early for Eastward Ho but again reported no scores. While some left before lunch, most of us left after lunch to struggle with the Sunday afternoon traffic on our way to Boston. We all agreed our 50th was a great success and that we should have another get-together next June.

Monday June 16 was another perfect day for Alumni Day, the fourth event of our 50th celebration. We had a good turnout for the luncheon in Du Pont Court, including several who had not been with us at Snow Inn. Following the cocktail hour on the green we assembled in Rockwell for the banquet. We had quite a crowd, some 60-odd, which filled three tables directly in front of the rostrum. Following an excellent dinner Harold Osborne, Chairman of our special gifts committee, was introduced by Gilbert Roddy '31, President of the Alumni Association. Osborne announced that '08's 50 year gift to the Institute amounted to \$170,923; and with the bonus given by Alfred P. Sloan, Jr., '95, our gift amounted to \$195,838. The Class may well be proud of their gift, which was possibly the largest from any 50-year class to date since the practice of class gifts started in 1940. We then adjourned to Kresge for a concert by Arthur Fiedler and his Pops Orchestra, which completed Alumni Day. A very successful day and a great 50th reunion.

The following attended some or all of the events of our 50th year celebration: Bunny and Mrs. Ames, George and Mrs. Belcher, Henry and Mrs. Blackburn, Bill Booth, Jimmie and Mrs. Burch, Nick Carter, Harry Chandler, Dana Clark, Herb Cole, Fred Cole, Dick and Mrs. Collins, Henry and Mrs. Damon, Myron and Mrs. Davis, Gregory Dexter, Ray and Mrs. Drake, Henry and Mrs. Dun, Charlie Edmonds, Leslie and Mrs. Ellis, George and Mrs. Freethy, Louis Gordon, Harold and Mrs. Griswold, Mrs. Harold Gurney, Carl and Mrs. Hall, Sam and Mrs. Hatch, Winch and Mrs. Heath, Paul Heimer, Harold and Mrs. Howland, Bill Hunter, Ted Joy, Karl Kenison, Leo Loeb, Howard Luther, Jim McGowan, Bill and Mrs. Medlicott, Waldo Morrison, Paul and Mrs. Norton, Harold and Mrs. Osborne, Joe and Mrs. Pope, Harry Rapelye, Pete Reyburn, Ed and Mrs. Riley, Miles and Mrs. Sampson, George and Mrs. Schobinger, Henry and Mrs. Sewell, Frank and Mrs. Sharman, Clarence and Mrs. Spiehler, Charlie and Mrs. Steese, Bill and Mrs. Taylor, Frank and Mrs. Towle, Joe and Mrs. Wattles, Harold and Mrs. Weeks, Edgar and Mrs. Williams. A total of 51 men, 40 of them at the Cape; and 33 wives, 29 of them at the Cape. Letters of regrets at not being able to join us in our 50th were received from Bill Barton, Ralph Batchelder, Harry Bentley, Walter Caldwell, Lock Davidson, Ferdi Friedman, Sam Gardner, Harry Lord, Spike McGuigan, Rens Schirmer, and George Whittle.

Waldo Morrison and Mrs. Katherine Wilke were married at Belfast, Maine, on August 9, 1958. They will make their home at Stowe, Vt. Harold Osborne and his wife left for Europe the latter part of June to attend meetings of the International Electro-technical Commission in Stockholm. Harold is a past president of the commission and a member of its governing committee. Before

the meetings they spent a few days at the Fair in Brussels, which they greatly enjoyed although they were rather disappointed in the U. S. exhibit. After the Stockholm meetings they spent some 10 days in western Norway with friends, enjoying anew that wonderful fjord country, even if it does rain.

I am sorry to report the death of Maurice Bullard on January 28, 1958, at his home in Pompton Plains, N. J. The sympathy of the Class has been extended to Mrs. Bullard. Our bimonthly dinner meetings of the 1958-59 season will be held at the M.I.T. Faculty Club, 50 Memorial Drive, Cambridge, Mass., at 6:00 P.M. on the following dates: November 5, 1958; January 7, '59; March 11, '59; and May 6, '59. Ladies are invited.—H. LESTON CARTER, *Secretary*, 14 Roslyn Road, Waban 68, Mass. LESLIE B. ELLIS, *Treasurer and Assistant Secretary*, 230 Melrose Street, Melrose 76, Mass.

1909

On Alumni Day there were 26 of us present, including the ladies, as follows: Van Bush (honorary classmate); George Bowers, I; Howard, I, Mrs. Congdon, and John; John, II, and Margaret Davis; Chet, VI, and Muriel Dawes; Tom, I, and Alice Desmond; Earl Hamilton, XIV; Francis Loud, VI; George Palmer, VII; Joe Parker, I; Gardiner Perry, VI; Julius, I, and Mrs. Serra; Art, I, and Betty Shaw; Chick Shaw, V; Henry, II, and Madge Spencer; George, II, and Marcia Wallis; John Willard, II. The weather was almost perfect—just a little windy. The luncheon was held as usual in Du Pont Court. This year there were several of the very large tents, and 1909 was assigned to a space under one of these almost next to the head table. After the luncheon and the talks by Acting President Julius Stratton and President Jim Killian, the 1909 50th anniversary committee, which we describe later, adjourned to a conference room to make plans for our 50th reunion. Chairman Loud invited all '09 members to come, so that in addition to the committee there were present Tom Desmond, Vice-president, ex officio; Chick and Art Shaw; Joe Parker; John Willard; Gardiner Perry; Chet Dawes.

In the evening after the social hour outside the Kresge Auditorium we convened in the Rockwell Cage for dinner. We again were pleased to welcome Van Bush to our table. It was only a year ago that he became an honorary member of '09. We were glad to welcome also John Congdon, son of Howard and Mrs. Congdon. It will be recalled that he has often been a guest at the '09 table at the winter Alumni meeting, even while preparing for the Institute.

Molly has appointed the 50th anniversary committee as follows: Francis Loud, Chairman; John Davis, Secretary; Henry Spencer; George Wallis; Harry Whitaker. As stated above, the committee and other class members met immediately following the luncheon and first elected John Davis secretary. The dates of the get-together are Friday, Saturday, and Sunday, June 12, 13, 14, 1959. After studying the possible places available, a vote was taken by which Snow Inn at Harwichport, Mass., received a distinct preference. A phone call was immediately made to the Inn, and it was glad to make reservations for us. Also Van Bush was asked to be our reunion speaker, and he

gladly accepted. In order to provide funds for the anniversary expenses it was voted to ask each member of the Class to contribute \$5.00, a notice of the same to be included in the first anniversary notice. Before this copy of The Review is received, undoubtedly much information relative to the anniversary will have been received in a notice sent out by the committee.

Molly was more than disappointed that he could not be present on Alumni Day, but the following note from him gives the reason: "Relative to my recent trip, it took me to Paris for three days where I attended the Conference of the C.I.G.R.E. as a delegate representing the American Institute of Consulting Engineers. I found the session on ultra-high tension transmission particularly interesting, especially the accounts of the Russian experience with 500 kilovolt transmission and the studies they have made of 600, 800 and 1,000 kv. for transmitting 2,000 megawatts to an industrial center in Siberia. I then spent two weeks in Saigon, Vietnam, and two days in Vientiane, Laos, presenting reports we had prepared on electric power development in these two countries. The weather was hot and humid; and I was glad when I left and met Mrs. Scharff by appointment in Geneva, after which we spent two pleasant weeks at a beautiful resort, Crans-sur-Sierre, in the Alps. We returned nonstop from Geneva to New York."

Under the 1911 class notes in the July Review it will be noted that Dennie had become incapacitated for a time and even went to the hospital. We learned of the incident and sent him a card conveying the sympathy of the Class and wishes for an early recovery. Sallie Denison has replied in part as follows: "Dennie wants me to tell you that he appreciated your card so much expressing greetings from '09. We will go to our summer home in Cornish, Maine, as soon as he can travel. I do hope any of his friends will drop in if near there." We may add that Dennie was one of our former students and has always been most thoughtful in sending us news and clippings relative to '09 men.

Brad Dewey, X, still keeps on going, although well beyond the normal retiring age. An article with his picture appearing in the *New York Times* for June 10 tells of him at 70 forming the Hampshire Chemical Corporation, of which he is chairman. The corporation will produce chemical specialties, including nickel and copper stripping compounds, bottle-washing compound additives, and synthetic amino acids. The new plant is located in Nashua, N. H. In these notes we have already related that, after retiring from the Dewey and Almy Chemical Company, Brad became a consultant for W. R. Grace and Company, of which later Dewey and Almy became a division; he then founded Bradley Container, which was taken over by the Olin Mathieson Chemical Corporation, for which he became a consultant. The *Boston Herald* of June 12 shows a picture of Brad with Edward Dana, general manager of the Massachusetts Transit Authority, and the renowned Dr. Paul Dudley White, all wearing straw hats with a 1908 band. They were celebrating the 50-year reunion of their class at Harvard.

Molly sent us a clipping from the *Milford* (Pa.) *Gazette* showing a picture of Mex Weill, II, President of Skydyne, Inc., sitting at his desk. The clipping cited the history of

the company, which was founded 20 years ago. At that time Mex met a European scientist who had perfected a low-weight, high-strength material known as Mautner's "sandwich material." Mex, with his technical knowledge and business sense, saw that the material had a promising future, and Skydyne was founded. Today the company is faced with continual demand for expansion to keep pace with government requirements. Mex is also a member of several professional engineering societies and participates actively in various community projects at Port Jervis. We all know of his travels and skill as a photographer.

On September 12 and 13 the second Alumni Fund Conference was held at M.I.T. to which class officers and class agents were invited. Art Shaw and your Secretary represented the Class. The conference was directed primarily to the sources of Institute income, to the different categories for which the funds are expended, and means by which the interest of Alumni could be increased in their support of the Institute. We not only heard a most comprehensive analysis of present and future engineering education by Acting President Dr. Julius Stratton, but were also honored by a description of the recent Geneva Conference by President Jim Killian, who had just arrived from there by air.

It is with the deepest regret that we learned of the death of George Haynes at the Newton-Wellesley Hospital on May 11. Although he had been in failing health, he was seriously ill for only about a month. We wrote to the family conveying the sympathy of the Class, as well as our own. George was born on January 25, 1885, in Haverhill, Mass., where his ancestors from England settled in 1633. He prepared at Powder Point Hall, Duxbury (where we held several early class reunions). He took Course VII, Biology, and majored in Public Health. We all know of his ability as a reporter and as editor of *The Tech*. While a student he was also most active in outside business pursuits. In the Twenties and Thirties he owned and managed the Davis-Smith Company on Newbury Street, an advertising and greeting card firm. George was associated with the pioneers of the industry such as the Rust Brothers, and saw the enterprise burgeon into a thriving business. Later he worked for a printing firm in Boston until he retired to devote full time to an international mail-order book house, which became a profitable enterprise. In his last years George was interested in horology and became a leading dealer in books on old clocks and watches. In 1908 he married Amy Trask of Arlington Heights, who died in 1951. On January 1, 1954, he married the former Maude Harris of Chestnut Hill, who survives. He is also survived by Mrs. Taylor Adams (Muriel Haynes) and Mrs. Edward Coe Embury (Marguerite Haynes) and two grandsons. George was a Mason, a Shriner, and a member of the Lodge of Eleusis. We all recall how faithfully he always attended class meetings and reunions until his health failed. We all shall miss him.

Albert Thornley wrote us this summer enclosing an obituary telling of the death of his wife Annie (Burnside). We wrote Albert conveying the sympathy of the Class and also our own. Mrs. Thornley was born in Fall River but lived in Pawtucket 65 years, graduating from high school there. She attended Pembroke College, graduating in

1910, and served many years as reunion committee chairman of that class. She was also a member of Pawtucket Women's Club, Women's Auxiliary of St. Paul's Church serving as its president eight years, and a member of St. Elizabeth's Guild of the church. In addition to Albert, she is survived by Albert, Jr.; a daughter, Mrs. Walter K. Donle; and five grandchildren. We all remember her and her regular attendance at our reunions. Albert states that she never missed a reunion since the ladies were included.

We learned of the death in June, 1957, of Edward Thomson Rice, V. He was a son of Edwin Wilbur Rice, one of the founders of the General Electric Company and a brother of the late Chester W. Rice, one of the Secretary's former students at Harvard who became a distinguished electrical engineer. The Rice family was very closely associated with the Elihu Thomson family, and hence Edward's middle name. Elihu Thomson was one of the leading pioneers of the electrical industry and at one time acting president of the Institute. After college Edward was connected with the General Electric Company until 1920, when he became associated with the Schenectady Trust Company until he retired as chairman of the board in 1939. In the meantime he purchased the Mystic Shipyard in Connecticut for building sailing boats, in which he had a keen interest up to the day he died. Besides Mrs. Edward T. (Harriet) Rice, he is survived by three daughters, a sister, and his stepmother, Mrs. E. Wilbur Rice of Schenectady.

We have also received from the Alumni Office notice of the deaths of the following: Burton R. Kimberley, IV, on July 4, 1955, at Lakewood, Ohio; Samuel F. Perkins, V, in October, 1956, at Dorchester, Mass.; Frank D. Neill, V, on May 9, 1958, at Boston, Mass.—CHESTER L. DAWES, *Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. GEORGE E. WALLIS, *Assistant Secretary*, 185 Main Street, Wenham, Mass.

1910

Letters from and news of classmates have accumulated since completing my notes for the July issue of The Review. As usual I will start out these notes for the November issue with the attendance of class members attending Alumni Day in June. We really had a very good turnout. Those attending were Jack Babcock, Hal Billings and wife, Roy Briggs and wife, Bob Burnett and wife, Art Curtis, Dick Fernandez and wife, Henry Hale, Ed Kiely and wife, George Lunt, Hal Manson, Murray Mellish and wife, Myrton Turnbull and wife, and Charles Wallour. Each and every one looked well and enjoyed the festivities. At the luncheon we received a telegram from Andy Fabens in Florida expressing his regrets at not being able to be present and extending his best regards to all.

Hal Manson received a letter from Frank Bell with a clipping from the *Dallas Times Herald* describing the Armed Forces Day parade in Dallas. Our Frank, Brigadier General Frank F. Bell, was on the reviewing stand with the guest of honor, Rear Admiral Walter Schindler. Hale Sutherland came into the news from the *Record*, Brunswick, Maine, when he replied to the Brunswick High Alumni Association. Hale is now professor emeritus, Lehigh University, and living in Moylan, Pa.

Harold Akerly, who has been with the Rochester, N. Y., board of education, retired as of July 1 and writes: "July 1 I join the unemployed and will try to catch up on some obligations that I have set aside for years."

On May 21 I was in New York City and had the opportunity of attending the May luncheon meeting of the New York class members. I had a most cordial welcome and good time. Rather than give the attendance at this May luncheon I will give you Carroll Benton's report of the June meeting: "It was nice seeing you at the luncheon last month. Hope you can make it again ere long. Wednesday we had our last luncheon until September. Too many of the fellows are away in July and August to make it worthwhile. We had seven present at Wednesday's meeting. As follows: Gordon Holbrook (the old reliable), George Magee, Carroll Shaw, Henry Schleicher, Jim Tripp, Larry Hemmenway, and Yours Truly. Al Hague, who is generally present, was on a cruise in his boat around Long Island and Erford Potter was down south somewhere on a vacation. Ray Jacoby was in the hospital recuperating from an operation and Fred Dewey was seeing his daughter off for Europe. I guess this about accounts for the regulars."

Walt Spalding writes as follows: "We are doing very well on a small-scale A. and E. basis, but I don't feel free to go away until late August; so I must miss the June Alumni events in Cambridge this year. I am certainly sorry to learn of Cliff's death. We enjoyed their visit here and again at our 45th. You are right, we will all miss him at reunions."

I have had a long letter from Ken Armstrong which I will hold for the next issue. I will also withhold until later a description of my vacation, when I took an auto trip out to Jackson Lake in the Tetons, Wyo.—HERBERT S. CLEVERDON, *Secretary*, Cleverdon, Varney, and Pike, 120 Tremont Street, Boston 8, Mass.

1911

Greetings, classmates, from the Pine Tree State—ideal location weatherwise for composing class notes for a September 15 deadline! This "rest and relaxation" program ordered by my Framingham and Cornish physicians is producing mavelous results, with two major exceptions: my not being able to attend Alumni Day last June and the upcoming mid-September Alumni Officers Conference. Otherwise I am showing good improvement, although I still tire rather easily and so am content still to take it easy.

Imagine my joy and delight when a fine greeting card reached me at Framingham Union Hospital just after Alumni Day with signatures of the 19 '11 men and three wives who were present at the event. Assistant Secretary Jack Herlihy took charge for 1911, and accompanying the card was his report: "Yesterday we had 19 classmates and 3 wives at the luncheon, and 7 classmates at the dinner. Needless to say, you were very much missed; otherwise all was about as last year: good weather, largest crowd ever, and an excellent performance by the Boston Pops Orchestra."

"Our delegation included: John and Margaret Alter, Bill Coburn, R. W. Cushing, Henry Dolliver, Luis de Florez, Bert Fryer, Tom Haines, Fred Harrington, Jack and

Mabel Herlihy, Arthur Leary, Roger Loud, Franklin Osborn, Chet Pepper, Carl Richmond, O. W. and Gertrude Stewart, Ed Vose, Emmons Whitcomb, Alec Yereance, and Erv Young. Coburn, Harrington, Herlihy, Osborn, Vose, Yereance, and Young also attended the dinner and concert.

"Bert Fryer, on east from Carnation, Wash., won distance honors for the Class, although it was great to have Alec Yereance from Alexandria, Va.; R. W. Cushing from Chevy Chase, Md.; Frank Osborn from Vineland, N. J.; and Admiral Luis de Florez from New York City join our 'Greater Boston' delegation." Thanks, Jack, for your usual fine job. Sara and I were delighted a few days later to have a nice visit at our Framingham apartment from Bert and Ethel Fryer. Bert is retired but is doing some consulting work on kiln operation.

By strange coincidence this summer, as last, word has reached us of the death of four more classmates: Robert E. Anderson, III, Phoenix, Ariz., April 17; Joseph F. Harrington, VI, New Rochelle, N. Y., June 2; Raymond H. Lord, VI, Wakefield, R. I., July 12; and Arthur F. Leary, XI, August 9.

We have no details on Bob Anderson's death, despite a request to his family. Born in Cincinnati, Ohio, November 9, 1887, he attended Notre Dame University before joining us in the Mining Engineering Course for special studies. He was a member of the Mining Engineering Society.

Joe Harrington's death at a hospital in Burlington, Vt., was very sudden, apparently of a heart attack. He and Rose were on vacation, according to Jack Herlihy. Jack attended the funeral at Canton, Mass., where Joe was born, along with Art Leary, who tragically followed Joe in death two months later. Joe prepared for M.I.T. at Canton High School and while an undergraduate was an active member of the Electrical Engineering Society.

After World War I Joe was associated with the New York State Tax Department and then vice-president of the Industrial Solvents Corporation in Albany, N. Y. He joined the sales department of Stanco, Inc., marketing affiliate of Standard Oil (New Jersey) in New York City, in 1932; and from 1947 to 1954 he was with the Enjay Company, Inc., chemical products marketing affiliate of Standard Oil. At the time of his death, he was a member of the Baxter International Research Bureau in New York. Their home is at 155 Centre Avenue, New Rochelle, N. Y.

He and his wife, the former Rose E. Kennally, were regular attendants at all of our class reunions; and Rose, in response to my letter of condolence, wrote: "I have been left so alone, so quickly, that it has not righted itself in my mind. Joe was so concerned about your recovery, Dannie." In addition to Rose, Joe left two daughters, Mrs. Mary E. Conway, Darien, Conn., and Mrs. Joanne F. Regan, New Rochelle; a son, William, of Norwood, Mass.; two sisters; and four grandchildren.

Ray Lord, former president-treasurer of the Affiliated Factory Mutual Insurance Company, died July 12 at his home in Wakefield, R. I., after a long illness. Born in Boston, he prepared at Dorchester High School and was a member of the freshman tug-of-war team our first year. He was an active member of the Mechanical Engineering Society, becoming a member of the executive committee and serving as the chair-

man of the excursion committee in our senior year.

He served overseas as captain in the Ordnance Division during World War I and joined the Manufacturers Mutual Fire Insurance Co., Boston, as a field engineer located in Providence, R. I., in 1922. He was named assistant secretary in 1937 and vice-president and secretary in 1944. When the Affiliated Factory Mutual Insurance Company was organized in 1949 he was elected president and treasurer, and he served until his retirement on February 12, 1954. He had continued residence in Providence until his retirement, when he moved to Hillside Road, Wakefield, R. I.

Besides his widow, he leaves three daughters: Miss Marion E. Lord, Johnston, R. I., Mrs. Stanley Wenberg, South Burlington, Vt., and Mrs. John A. Sloan, Oakmont, Pa.; a son, Edward R. Lord, Levittown, Pa.; three sisters; a brother; and seven grandchildren.

In view of the fact that I had had several greeting cards and a gift crossword puzzle book while in the hospital, plus a fine post-Alumni Day letter, from Art Leary, XI, it was a distinct shock on August 10 to read of his sudden death the day before at his home, 44 Tennyson Street, West Roxbury. Born in East Boston, Art Leary prepared at East Boston High School. He was a member of the Chemical Engineering and Biological Societies and K₂S; also he was a member of the Glee Club in his junior year.

Following graduation, Art became an engineer with the J. L. Mott Iron Works, Boston, later attending Boston College for a year, during which he obtained his master's degree in education. He then accepted an appointment as mathematics teacher at Boston English High School. Continuing in the Boston school system, he taught for 33 years, retiring as head of the Hyde Park High School mathematics department in 1956.

He wrote several math books with wide circulation, and in his June 19 letter he stated: "I recently heard from Scribner's that my geometry book is going very well, especially in New York State, having already sold over 18,000 copies." Also, since public school retirement in '56, he has been doing some special work at a Boston preparatory school, concerning which he wrote: "I completed the term at Newman School on May 22 and don't expect to work again until September 9. Our plans for the summer are indefinite due to illness of Mary's aunt, who has been living with us recently. I am finding plenty to do, but the best of it is I have the time. There is no strain, outside of determining what order to take up the various jobs."

Besides his wife, he is survived by a son, Arthur R., and a sister, Mrs. Louise B. Regan, both of Boston. Again Jack was able to represent us at the funeral, also attended by Art's longtime buddy, Charlie Linehan, I, and Charlie McManus, I. In response to my note of sympathy, his charming wife, Mary, wrote: "Arthur was not ill, but thank God he did not suffer following his heart attack—neither did he know he was going. Newman Prep showed great respect to Art's memory. The school was closed the morning of the funeral and the faculty formed an honor guard. Arthur died as he lived—peacefully."

Just after I had finished these notes for the deadline, the following telegram was re-

ceived advising of the death of classmate Nathaniel S. Seeley, II, 115 Van Rensselaer Avenue, Stamford, Conn.: "Nat passed away quietly in his sleep this morning. (signed) Louise." Our sympathy has been extended to Louise and her family. Details in next class notes.

President Don and Lois Stevens had a gorgeous vacation trip to sunny Hawaii, and I have asked him for a report for us all: "For once I am completely stuck. Hawaii is so wonderful in a thousand, thousand ways and my mail is so wonderful and overpowering, that I don't know where to begin. Also my health is marvellously improved.

"The day after St. Valentine's Day Lois and I left Idlewild Field at 1:30 P.M. and reached San Francisco at about 8:00. We knew nothing about 20 inches of snow that roared in after we left, and after visiting friends and relatives we took off for Honolulu at 9:00 A.M., landing about 3:00. We've traveled a lot but never seem to have discovered any place so beautiful, so exciting, so hospitable, and so much fun as the Hawaiian Islands.

"From our balcony at the Surfrider Hotel we seemed to see everything that went on night or day—even whales spouting. I took over 100 snapshots in color as we traveled from island to island through the ever more gorgeous Hawaiian chain—always by plane. We were there over six weeks and I was in the mild Pacific almost every day for swims, on surf boards, in outrigger canoes coasting down the big rollers, or sailing in the fast, fast double-hulled catamarans.

"Dancing on two different occasions, we ran into Ernie May '22, usually entertaining a beautiful harem. The hula dancers are not to be wisecracked—their singing and dancing is beyond description. Flowers and fruit were in profusion and extinct volcanoes were fascinating—one 27 miles around, 3,000 feet deep, and the rim 10,000 feet above sea level. Returned by ship, *Matsonia*, on rough seas. Home to home two months.

"Ibby Morrison, I, news of whose death shocked me, was a classmate of mine at Brookline High. Just think what that president of the National Research Council said of him: 'His was the most brilliant mind of all the engineers of Canada.' 1911's praises are still being sung!"

Another tribute to an '11 man—this one, Walter Wilson, X, still active in business—appeared in the May 9 *Boston Traveler* under the title "Lawrence Metal Firm's Outlook Good." "There's been a case of quiet expansion going on in Lawrence," the story opens, "all during that city's most unsettled years. It's the Andrew Wilson Company, maker of sheet metal products. The firm began in 1900, was incorporated in 1913, and has grown steadily ever since, managing to prosper with no built-in advantages except skilled labor and management."

There have been generations of Wilsons in the company: Andrew Wilson, the founder; two sons, Walter C., Sr., now president, and Alexander, now deceased; Walter's son, Walter, Jr., called Bud and now vice-president, and Alexander's son, Alexander M., Sid, who is treasurer.

"Walter, Sr., an M.I.T. 1911 grad," the article continues, "explains that the company was originally in the roofing business. 'Around 1913 we started making large hoppers, trucks, and steaming boxes for textile

mills. We did war work in '17 and '18, then began to go into the metal shelving and cabinet business. During the depression we started making sheet metal ventilating ducts for schools, while during World War II we did a lot of Navy Yard work, making such things as aluminum lockers for aircraft carriers, cruisers, and destroyers. After the war we started getting into school house work and began our \$500,000 expansion program."

Basically the company confines its operations to New England, with sales of around \$2 million yearly: 35 per cent storage shelving, 35 per cent in lockers for schools and factories, and 30 per cent special metal-working jobs. There's a long-range expansion program for their recent new building, and according to Walter: "We looked at a lot of mills before putting up our new building, but our floor load is really too heavy for a former textile mill (original building)."

In conclusion, Wilson stated the outlook is bright, adding that his main problems are "meeting competition that is considerably larger, and the difficulty of plowing back enough capital after taxes to allow us to expand. We felt a slack off in the first three months of this year, but now things are looking much better and I'd say that 1958 would be slightly below last year for us, but not much." Nice going, Walter!

Space does not permit listing all the wonderful messages, gifts, and cards I have received from classmates, but they have been individually acknowledged; and this "Write to Dannie" campaign requested by thoughtful President Don has resulted in some fine class notes for this issue. Here's a particularly fine resumé from that old General Electric war horse, now a full professor at Union College, Schenectady, N. Y.—Bob Schurig, VI:

"My interest in teaching reaches way back to 1910, when I took a summer job as instructor in surveying and railroad engineering at the Harvard Engineering Camp at Squam Lake, New Hampshire, under Professor Hughes (I had taken these courses with my other studies at Harvard before coming to M.I.T.). After our graduation I spent two years as a student engineer with Stone and Webster in Pawtucket, R. I., then came back to M.I.T. as an instructor in electrical engineering and later secretary of the newly created E. E. Research Division. In addition to Jackson, Lawrence, Laws, and Pender, this gave me intimate contact with A. E. Kennelly and C. A. Adams of Harvard, to whom I have been ever indebted for inspiration and guidance.

"In 1917 Norm Lougee, VI, told me of a vacancy under Steinmetz in the consulting engineering department at General Electric; so I chose Steinmetz over these other big men, and for several years I had the marvelous benefit of daily consultations with him. After his death, although the consulting engineering group became a part of the General Engineering Laboratory, I continued with the same kind of work, which now makes me more effective as a teacher.

"In writing, I have had 24 technical papers published in various technical journals, gave 14 discussions (published in American Institute of Electrical Engineering transactions), and was an associate editor of the *American Handbook for Electrical Engineers* in 1914 and 1922. Nine U. S. patents have been granted me relating to high-

voltage circuit-interrupting devices, electrical appliances, and electric measuring instruments. My military service included five years (1941-45) as administrative officer, Ballistic Research Laboratory, Army Ordnance, Aberdeen Proving Grounds; and during this service I rose to the rank of colonel and received an Army commendation ribbon. I find now that this military work helps me in teaching, for many of my students who are in the R.O.T.C. program will go into military work.

"Upon retirement from G.E. in 1955, I received an invitation from Professor Harold W. Bibber (M.I.T. '20), Union College, to join their electrical engineering department. Needless to say I enjoy my work as professor of electrical engineering very much and am about to start my fourth year of teaching at Union." A wonderful career, Bob, and more power to you!

One particularly cheering letter, among many from classmates who have survived heart attacks, came from Bill Whitney, Creamery Package Manufacturing Co., Chicago: "As you have probably been told a number of times, the heart patient usually outlives his associates because he follows instructions, taking care of himself. You may remember I was laid up with a heart condition in '42 and am still going strong." Then there are the letters from fellows much worse off than you, such as a handwritten letter from Harold Robinson, I, from Holden, a suburb of Worcester, Mass.: "Excuse the appearance of this letter, but as you know I am nearly blind and have to write by feel rather than by sight. I never have felt better than I have since I retired. I have learned to relax, and although I find the time heavy on my hands the days seem to pass too quickly—my physical showed me to be a fine specimen and except for my eyes I'm fine. I have the talking books issued by the government and American Society for the Blind and they help a lot in passing the time. Frances has learned to drive and has her license, so I have a chauffeur, secretary, and housekeeper all in one.

"We enjoyed a few days' visit we had from Bert and Ethel Fryer and in early September had an overnight visit from Ned Mason '12 and his wife. He and I went through school together in Winchester, Mass. My next door neighbor is Webster K. Ramsey '22, chief engineer, U. S. Envelope Co., Worcester. Had lunch recently with Warren and Marjory Simonds, I, in Orange. We recently returned, Frances and I, from an auto trip pretty well around the whole U.S.A. In closing, it's always nice having the 1911 notes read to me, Dannie, and I hope you'll continue to write them for many years to come. Would like to get letters from any '11 men who would like to write." Please address Hal, classmates, at 14 Damon Street, Holden, Mass.

Frank Wood, II, retired, writes that he and his wife, Bess, have moved from Durham, N. H., to 229 North Street, Manchester, N. H., having "found this little dream of a six-room house in August, 1956, and are very happy here." He advised: "Get all the rest you can, drink plenty of Scotch every day, and you'll get over it—I did in 1945. I can work—gardening and woodworking—two or three hours a day, even shoveled snow last winter; but if I give in and spend most of the rest of the day sleeping or relaxed, it doesn't seem to hurt me.

"Have at last completed all but two of the Masonic degrees and find it very interesting and educational. My daughter had her second daughter last October (two boys, two girls). Her oldest is a junior in Marblehead High. My son is not married but has a good job (much more lucrative than any his daddy ever had) with Western Electric in North Andover. He gets his master's degree at Carl Ell's Northeastern this June."

Harry Tisdale, V, retired, and Grace, have written about every six weeks since my attack from P. O. Box 2655, Fort Myers Beach, Fla.,—wonderful! "Having lived in suitcases since we came down here last November 15, we moved into our new home on April 7; and believe me we have been busy finding a place for everything. Then the grounds had to be seeded and now (May 22) I am setting up a motor and pump to keep it watered....Right now (mid-July) I am chief cook and bottle washer, as Grace sustained a fracture of the metatarsal of her right ankle and will have to have a cast on for about six weeks....Grace is getting better and now (August 27) helps me in the kitchen, although still on crutches; and we hope the cast will be off by mid-September. Have put out nearly 40 plants, so soon we should have a maze of blossoms around."

Royal Barton, VI, reports a new address—2 Main Drive, Lake Interville, Boonton, N. J., which he hopes "will be my last change of address for a long time!" He reports it's not far from Mountain Lakes, where they were formerly, and "both the house and the grounds are smaller and, we believe, more in keeping with our (aging?) capabilities." Delivering the charge to the largest group ever to be graduated from Northeastern University (1,619), President Carl Ell, XI, urged them to seek opportunities for service "toward others, rather than opportunities for yourselves." This September he started his last year in the presidency prior to retirement. Albert Gardner, II, chief engineering draftsman at Bethlehem Shipbuilding Corporation, Quincy, Mass., was given a testimonial banquet at the Red Coach Grill, Hingham, June 5, in celebration of 43 years' service with the company.

A tear sheet from a recent Phi Kappa Sigma letter (sent by Beaumont Whitton '33) stated: "Sam Hayes, V, who joined 1911 after graduating from Virginia Military Institute, has retired from the Ciba Company, dyestuff manufacturers, Charlotte, N. C., where he was southern sales manager, effective the first of the year. Retirement wasn't for Sam, though, and after a few weeks getting rested up he joined his son-in-law and is now the newest retired salesman and business developer for Electro-Mechanical Engineering Company—developers, manufacturers, and distributors of specialized electronic and mechanical devices. What with his social security limitations, Sam was telling a recent gathering of Tech Alumni the value of a college education: In 1911 Sam went to work for \$50 a month and worked 66 hours a week. Now he's making \$100 a month and working only 40 hours a week, doubled his salary and cut the hours nearly 40 per cent, and maybe it pays to graduate from two schools and get 46 1/2 years of experience!"

In a most cheering recovery letter, Chief (erstwhile Bun) Wilson, XIV, Alcoa head, wrote from Pittsburgh: "As two of the younger '11 men, you and I have added

responsibilities to the Class; and you must not let me down. I am sure you will recognize that by following competent medical advice and exercising a full share of patience there need be no justifiable fears for the future. Certainly Don Stevens is an outstanding example for us all to look to.... With a great deal of reluctance I accepted the chairmanship for this region of the M.I.T. Faculty salary campaign. This is now about wound up with reasonable success. Actually I obtained considerable satisfaction from it and from the contacts, both new and old, which were the result. These last few months were not an ideal time in which to raise money for any purposes, particularly in this district which has been somewhat harder hit by the recession than many districts. We do think we see (August 7) definite indications which will insure improved business conditions, but unfortunately many of these indications carry serious inflationary implications. This is very disturbing to me."

B. Darrow, VI, retired, wrote encouragingly from Akron, Ohio, reminding me that he had "weathered" two slight heart attacks (ten and three years ago) and adding: "I took two grandchildren up to the Cleveland Zoo in mid-May and it's a wonder I didn't have another attack trying to keep them out of trouble." His wife, Florence, having died two years ago, his daughter keeps house for him. The two grandchildren belong to his son, Jack '39, who operates the Akron Camera Company, 1667 West Market Street, Akron 13, Ohio, where B. has an "office." "For almost 30 years now," he continues, "I have had 18 acres about 8 miles from the center of Akron. Two houses on the place, one occupied by Jack, the other by my daughter and me. C. R. Johnson, X, comes to Akron two or three times a year and we always have lunch together. If I am at the club during the week or Saturdays I occasionally see Kilborn, Pushee, Jack Tuttle or Bill Wolfe. Last fall I was in Boston and spent an evening with Hal Manson, whom I hadn't seen for 40 years. He used to live a block from me in Roxbury. A lot of these people I have mentioned are 1910 men—that was my original class, you remember, until you and Bert Fryer and the late Charlie Barker adopted me in the Class of 1911." And right glad we certainly are that we did adopt you, B!

A couple of fine letters from Dick Ranger, IX, whose Rangertone, Inc., 73 Winthrop Street, Newark 4, N. J., is finally "coming into its own in a big way!" "So the old clock rang the alarm," the first letter started. "Happened to me about five years ago and now I am living with it more discreetly, as I am sure they told you to do. Still working like time to put Rangertone over. Tomorrow (May 19) I deliver to Lowell Thomas a unit to take on an expedition and another to Columbia Broadcasting System. These are very light-weight combinations that will still give them synchronous sound with pictures.... Demonstrated our new stereophonic loudspeaker on the stage at Town Hall in mid-May. This is right in line with all the high fidelity enthusiasm; and when the number was over, there was a tremendous burst of applause and then some booing! But in any event they made me come out and take a bow, even without a black tie. The slight booing gave me a Nixon complex, but I really believe it was because it was *avante-garde*."

"About time we got Rangertone off the ground," he added in an early August letter, "and it does seem that we may do just that this coming season. Our development work is largely behind us. Of course we did start after World War II, which gave me the opportunity to find out all about the German magnetic recording; but our application of it to motion pictures has been quite special. Nevertheless people using it for films, especially for television, are becoming more and more numerous; and it means real money savings to them."

With greetings from Miami, Harold Smith, II, enclosed a clipping from the *Miami Herald* of August 3 concerning a speech by General George Kenney, I, there the night before. George, still national head of the Arthritis and Rheumatism Foundation, with headquarters now at 10 Columbus Circle, New York 19, N. Y., said that the national fight to conquer these two dread diseases will be expanded. George said A.R.F. resisted recent efforts of the Polio Foundation to take it over because the need for research and service in the field is too great to jeopardize. The polio fighters, he declared, plan to limit their support to one segment only of the field of arthritic diseases, leaving the others untouched. "Arthritis and rheumatic diseases constitute an enormous problem," George said, "with some 11 million people in this country suffering from dozens of different types. It is inconceivable that the Polio Foundation would have sufficient funds available, at least for years, to cover the needs of patient care, education, and research."

Was sorry to learn in an early greeting letter from Johnnie Scoville, IV, that his wife, Bert, had been in the hospital for more than two weeks "with pleurisy, pneumonia, and a few other things," but glad to hear she came through o.k. He enclosed four definitions: "Statistician: one who draws a mathematically precise line from an unwarranted assumption to a foregone conclusion; expert: a person who avoids small errors as he swoops toward the grand fallacy; meteorologist: one who can look in a blonde's eyes and tell whether; minerologist: one who can look into a girl's eyes and tell if she's virgin ore."

You'll all agree that Jack Herlihy did a fine job preparing the class notes for the July Review while I was hospitalized, thus keeping our class record at 100 per cent for every issue containing class notes since graduation! He and Mable came to see me twice at the hospital and then came over from a vacation trip to nearby North Conway to see us here at Wellsweep. Henry Dolliver, I, came out to Framingham from Belmont three times to cheer me on during hospitalization and convalescence, and we had a fine visit from C. R. and Gladys Johnson, en route from Ridgewood, N. J., to Damariscotta, Maine, for a vacation. They told us how much President Don and Lois Stevens would like to come up and see Sara and me; but in addition to their Hawaiian trip, they had visited their children and their families in Michigan, New York State, and New Jersey, and that was it for the present. Don has kept in touch with us constantly and his generosity and thoughtfulness is greatly appreciated by Sara and me—likewise that of Bill Warner, I, in Nowata, Okla., and also that of one anonymous classmate.

Here are some other address changes from the Alumni Office: Professor Harold E. Babbitt, I, Civil Engineering Department, University of Missouri, Columbia, Mo.; David E. Bartlett, VI, Saratoga Flat, Laconia, N.H.; Philip L. Caldwell, I, Spectacle Lane, Wilton, Conn.; Norman Duffett, X, 909 James Avenue, Niagara Falls, N. Y.; George B. Forristall, II, 101 Harvard Street, Newtonville 60, Mass.; L. Gordon Glazier, VII, Meadlands, Lowell Road, P.O. Box 204, Concord, Mass.; Herbert P. Joyce, V, 6 Main Street, Brockton, Mass.; Dr. Victor P. Klapacs, VI, Apartment 817, 1440 Beacon Street, Brookline 46, Mass.; Thomas R. Lathrop, VII, 2328 Arlington Avenue, Columbus 21, Ohio; Theodore F. W. Meyer, II, 671 Eton Road North, Birmingham, Mich.; Samuel M. Schmidt, VII, 732 Greenwood Avenue, Cincinnati 29, Ohio. Doubtless you will want to get your tax deduction for the current 1958-59 M.I.T. Alumni Fund in your 1958 report, so please send it in promptly. Remember: all gifts between 1956 and 1961 count in our 50-year gift to our alma mater, so make them as generous as you can. Thanks again, classmates, for all your kindnesses since my attack, keep those letters coming, and visit us here at Wellsweep whenever you possibly can. God bless you all and best wishes for a very merry Christmas and a happy and healthy new year!—ORVILLE B. DENISON, *Secretary*, Wellsweep, P. O. Box 11, Cornish, Maine. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford 55, Mass.

1912

The following were at the Alumni luncheon in June: Lenaerts, Busby, Collins, Davis, Hunsaker, Noyes, Merrill, Manning, Schell, and Shepard. The wives were Mrs. Lenaerts, Mrs. Hunsaker, Mrs. Noyes, Mrs. Manning, and Mrs. Schell.

John Noyes and Caroline left in June for Europe, and a card from Germany tells of their wonderful time. They visited Ireland, Scotland, England, Sweden, Denmark, Holland, Belgium, Switzerland, Germany, and Austria and were on their way to Italy and then France. I will try to get a detailed account of their travels from them later.

Bob Wiseman was unable to come up for Alumni Day as he was leaving for London on his way to Copenhagen and Stockholm to take part in a technical committee meeting under the auspices of the Electrotechnical Commission. It sounds rather important to me.

Jay Pratt of Oak Park has just received the Meritorious Civilian Service Award, which is the second highest honorary award for civilian employees. The citation reads as follows: "Mr. Pratt was cited for outstanding performance of duty as special assistant to the commanding officer. His wide experience proved invaluable to the Chicago Ordnance District and to many small business organizations in this area, particularly in breaking production bottlenecks during the Korean Conflict.

"Mr. Pratt is a graduate of Massachusetts Institute of Technology. He started his business career as a junior engineer with the Liquid Carbonic Corporation. From 1913 to 1951 he served in many capacities with this corporation, becoming executive vice-president of the company.

"In 1951, when the Korean situation was extremely serious and procurement of Ordnance material urgently needed, Mr. Pratt was persuaded to come to the Chicago Ordnance District, as small business specialist. He later became special assistant to the commanding officer. Mr. Pratt retired from the Chicago Ordnance District in June, 1957."—FREDERICK J. SHEPARD, JR., *Secretary*, 31 Chestnut Street, Boston 8, Mass. C. BOLMER VAUGHAN, *Assistant Secretary*, 455 West 34th Street, New York 1, N. Y.

1913

So! Another successful reunion of the Class of 1913 of M.I.T. was celebrated at the Oyster Harbors Club on June 13, 14, 15, and on to Cambridge on the 16th for Alumni Day. Most of the regulars were there, and we were delighted to have Lee Parsons and Polly, Johnny Welch and his charming wife, Sam and Mrs. Rogers, Phil and Clara Burt, Dave Nason and his better half as well as his interesting daughter, the Gustin boys together with their wives, also F. C. Weiss, all more or less new celebrants at our recent reunions. The class picture, which is inserted in another section, will give you or those who did not enjoy our 45th reunion a chance to see the best looking Class with the most beautiful wives of all classes. Of course the hall room boys Gene Macdonald, Walt Muther, Ken Scott, Tom Byrne, and a few of our girls and boys including Mrs. Gotherman, Mrs. Nason and daughter, Mrs. Pierce, Mrs. Gustin, Sr., Mr. and Mrs. Lester Gustin, Jr., Mr. and Mrs. James Gustin, and Mr. and Mrs. Zenas Crocker did not appear for the picture; but we do not demand an excuse from any of them. The various events were run off according to schedule as advertised. The committee are indebted to all who participated as well as to Don Church and his efficient staff. The meals; the accommodations; the rocking chairs; the golf course; the cocktail party; the ancient and nearly modern candid movies shown by Charlie Thompson, together with the one-man orchestra, Charlie Brown; the class dinner; and the Sunday class meeting were all enjoyed by the assembled 1913 classmates and their guests.

The class meeting produced rather interesting results. The officers of the Class were re-elected: R. Charles Thompson, President; William R. Mattson, Vice-president; and George Philip Capen, Secretary-Treasurer. So until our next you will have to suffer with those chosen. The question of a bountiful gift from the Class of 1913 was discussed at considerable length, this of course, to be presented to the Institute in 1963. Several sizable pledges were made, which will be properly publicized shortly from or by Bill Mattson. Many of our group enjoyed the Alumni Day in Cambridge and were joined by Warren Glancy and his wife, Henie and Mrs. Glidden, Arthur and Mrs. Hirst, Mrs. Muther, and Phil Terry. The July issue of *The Review* published a very detailed description of the splendid program of Alumni and guest participation.

We must interrupt now for station announcement: "Mrs. George Lafayette Davis announces the marriage of her daughter Josephine to Mr. William Rhods Mattson on Saturday, the thirteenth of September, nineteen hundred and fifty-eight, at four o'clock in the afternoon, University Park Methodist

Church, Denver, Colorado." For the benefit of you much missed at the reunion, Josephine is the sister of Larry Hart's wife Airry. It is rumored that Larry was the best man and as would be expected Airry stood up for Jo. As one who knows, it couldn't have happened to a nicer couple. The members of the Class wish you, Bill and Jo, the best of everything from now on.

Art Townsend is still receiving honors as he was one of the committee as a past president of the class of 1908 out of Boston English High School to arrange for the 50th anniversary reunion at the Parker House. We have also learned through the underground that Professor Townsend has joined our group, "Want to see my operation?" We are very glad to report that Al has returned to good health again and when last seen was guiding the destinies of Lowell Institute at the Institute again. Again by the outside route we learned that talented author Ed Cameron collapsed in the early part of last week and after a short rest in the Framingham Union Hospital is again ready to meet all others in his usual debatable manner.

Of course we missed Bob Weeks at Oyster Harbors this past reunion, for Bob is always the life of the party at all 1913 parties. We were very much pleased to hear from him that he had received the card which we all sent to him from the 45th and that he was fast recovering from his disabilities and would join us at our next reunion (which is in 1961). Also, Bob called us from Boston this summer on his way to Maine; so we judge he is "back in the saddle again."

It has been a rather hectic past few months for your Scribe. First he entered the real estate game(?), then became the sales representative of the new hotel, Motel 128 in Dedham, and not having enough to do fell off a 20-foot ladder on the glorious Fourth of July. Fortunately or otherwise no bones or neck were broken; so instead of being in retirement, he now works seven days a week. August 20 was a sorrowful day for us '13 men who were so closely associated with Pop Ready. On that day Neva left this world and joined Bill in heaven where only a short time ago he entered the Great Beyond. We all know that the passing of these dear friends has left a void which can never be filled. Thus time passes on.

There have been received a number of congratulatory letters from your and our classmates who attended the 45th, which makes your officers feel that the efforts, time, and money were not wasted. The big drive for this year's Alumni Fund and our special 50th reunion gift has been launched on September 13 and 14. We—Charlie Thompson, Gene Macdonald, and Yours Truly—attended the second Alumni Fund Conference for two days at the Institute. Let's give, boys and girls, until it hurts. The longer we live the more we must realize that we are indeed fortunate to be part of that great and world-renowned institution Massachusetts Institute of Technology. So until December keep the faith and take pity on your Correspondent. Write, wire, or telephone any news or comments you have or possess. As the editor of *The Review* has intimated, be brief, write notes about many classmates, but send in notes every month. We shall, with your help.—GEORGE PHILIP CAPEN, *Secretary-Treasurer*, 60 Everett Street, Canton, Mass.

Many thanks to our Assistant Secretary, Herman Affel, for taking over the class news and other class activities while your Secretary was absent during April through June. Three weeks of this time were spent in Japan, where your Secretary and his wife were entertained extensively by our loyal classmate and his wife, Mr. and Mrs. Tatsuo Furuichi. Unfortunately, space here does not permit a detail of the courtesies extended by Furuichi and Mr. Chatani '22, the President of the M.I.T. Club of Tokyo. It will be recalled that Furuichi had retired from the Navy before World War II and was vigorously opposed to that war. He held the rank of admiral in the Construction Corps, holding a position corresponding to that of our late classmate Admiral Richey in the U.S. Navy. He is currently a consulting electrical engineer for several companies. Because of his association with the Imperial Household and because he is the holder of the First Order of Japanese Decoration, we had the rare honor to be invited to the Imperial Palace and to be received by the personal representative of the Emperor.

Both Charlie Fiske with his wife and Herman Affel attended Alumni Day. They were joined by Atwood and his daughter, Chatfield and wife, Crocker and wife, Derry, Fales, Gazarian and wife, Leigh Hall and wife, Leicester Hamilton and wife, Morrison and wife, and Peaslee. Earlier, as part of the commencement program, Leicester Hamilton was honored on his retirement as professor of chemistry. He has been a member of the instructing staff since 1914 and for many years the executive officer of the Department of Chemistry. He has also served for several years as secretary of the Faculty and for 25 years as chairman of the Dormitory Board. Hamilton will continue on a part-time basis as a special lecturer.

Another who has just retired is Tom Sheehan, the City Engineer of Malden, Mass. Tom has been associated with that department for 41 years. In addition to the usual duties of city engineer, Tom's duties have also included supervision of Public Works Department, cemetery work, and the Traffic Commission.

Don Douglas, Chairman of the Board of Douglas Aircraft Company of Santa Monica, has been elected by the M.I.T. Corporation as a five-year Alumni term member. Ray Dinsmore is currently serving his fifth year in a similar position. Ray received, on June 14 from Indiana Technical College of Fort Wayne, a special citation for his outstanding contributions to industrial development through management, science, and engineering.

On July 30 Charlie Fiske came down from Maine, Skip Dawson came east from Pittsfield, Mass., and met with your Secretary at the Publick House at Sturbridge, Mass., to decide on a place for the 45th reunion next June. It had previously been found impossible to get a place exclusively. The many colleges in this area had already taken over the desirable places. We finally agreed on the Publick House, and late this fall the first notice with details will be sent to the Class. Just now mark your calendar for June 12 to 14. Sturbridge is on the new Massachusetts Turnpike, readily accessible from New York City, the west via Albany, Boston, and all New England.

Three of our classmates died within a month of each other this summer. The first was Joseph H. Currier on July 19 at his home in Milton, Mass. Joe was born in Newburyport and prepared at the high school there. On graduation in Course II, he became a draftsman at the Boston Navy Yard, advancing to a lieutenant in the Navy during World War I. At the end of the war he remained in the Navy, rising to a commander. His service included being chief engineer of the U.S.S. *Salt Lake City*. He retired in 1938 and became a design engineer with Stone and Webster Co., from which he retired last year. Currier was married on December 25, 1919, to Helen L. Hennessey, who survives him.

Thomas L. Chase died at his summer home in Rockport, Maine, on August 11. Tom prepared at the Central High School of St. Louis, Mo. During his undergraduate days at the Institute, Tom was active in many affairs including athletics. He was a member of Delta Tau Delta. On leaving the Institute, he went with the New York, New Haven, and Hartford Railroad, then transferred to the Boston and Albany Railroad as an evaluation engineer. In 1930 he joined the John Hancock Mutual Life Insurance Co., where he served for many years as assistant treasurer. Tom retired in 1954 and made his home in Wellesley, Mass., where he was active in the Congregational Church and the Wellesley Club. On June 24, 1917, he married Hazel Bolles who, with two daughters, survives him.

Four days later Leslie W. Snow died at his home in Snowville, N.H. Until his retirement in 1955 Les was a vice-president of the Chase Manhattan Bank of New York, making his home in South Orange, N. J., where for several years he had been a trustee. Snow was born at Rochester, N.H., and graduated from Dartmouth College before coming to the Institute. He was a member of Theta Delta Chi and very active in many undergraduate affairs and clubs. During World War I, Snow served as a major in the Ordnance Corps, American Expeditionary Force. On June 4, 1921, he was married to Emily Royer who, together with three daughters, survives him.—C. P. FISKE, *President*, Cold Spring Farm, Bath, Maine. H. B. RICHMOND, *Secretary*, 100 Memorial Drive, Cambridge 42, Mass. H. A. AFFEL, *Assistant Secretary*, 120 Woodland Avenue, Summit, N. J.

1915

Hello classmates, and a welcome to another year of 1915 notes and news! Next month you'll get the blow-by-blow description of the class cocktail party that Barbara Thomas and Al Sampson put on for us on Alumni Day. However, a little advance on that—Ruthie Place came on from Pasadena, visited old friends in the Class, and had a delightful time with us at Alumni Day. More next month. We can all join together in being happy for Dennie '11, who has recovered from his severe coronaries and is now living in Cornish, Maine. We all sincerely wish him a complete and speedy return to good health—we all miss him!

In answer to our July notes, Bob Welles wrote: "Your very kind note of congratulations was waiting for me here upon my return from a trip to the northern part of the state to see a daughter and our first

grandchild. I suspect that Ray Stringfield tipped you off about this job that was wished onto me. Anyhow we have a grand group here. There are about 1,900 M.I.T. men in southern California and we have quite an active M.I.T. Club, with a board of governors that meets every month. Ray is a member of the board. I hope you meant what you said about coming out here in 1960. Give us a little advance notice of it, and we'll plan a little outing in my boat. The boating is a bit different here from what it is in New England waters, but the water is just as salty, just as wet, and very deep. And once in a while the fishing is excellent. And as long as I am writing to you allow me to express my thanks as a member of the Class of 1915 for the work that you have been doing for the Class so long and so well. Most of us don't get very articulate about such things, but as the years roll by we find that we have developed a great regard for a man who has so faithfully done so much."

On a July 24 television program called "The Price is Right," Sam Berke's Deep Lake Farm gave away a cow and three small heifers. Sam wrote that it was primarily a promotion for Guernsey milk but that his farm would get secondary publicity in the agricultural publications writing up the television program. He said that he was nailed down to his farm for the summer—which he could accept without too much protest. He has a wonderful place out there.

From a summer resort in New Hampshire Jerry Coldwell wrote that as chairman of the Board of Ford, Bacon, and Davis he has a bit more available time than he formerly had. "I will retire the end of this year so will have even more time. I am on the board of trustees of the Roosevelt Hospital in New York City; and as we have an \$8 million construction program under way, a good part of my time will be taken up there. Steve Brophy '16 is also on the board. We expect to drive to the West Coast next spring on a leisurely trip, perhaps two or three months, and see some of the country from the ground rather than from the air as I have usually seen it. Further than that we don't have any plans. Will see Wink Howlett on the Cape if he is there. He probably spends his vacation off the Cape to get away from the influx of vacationers such as we are! My best to you and Frances."

Parry Keller wrote these letters before and after coming on to the class cocktail party and Alumni Day: "It was indeed a pleasure to receive such a nice letter (May 7) from Azel with the cordial and friendly footnote by Fran. Yes, I will be at M.I.T. on Alumni Day. I am enjoying retirement; June 1 will end my first year in this status or higher form of life. I have found it easy to keep as occupied as I want to be. When an occasional situation requires, I find myself able to do nothing naturally, gracefully, and artistically (I was pleased to discover that I had this latent talent). I have not been bored a minute during the past year. I will give you both a full report and try to answer questions when we get together. I am sorry that I had to miss the class dinner last January in New York. According to Azel's write-up in *The Review*, it was quite an enthusiastic reunion. I am happy to report that my son, his wife, and the three children are all well. I spend about every other week end with them. It is good to

know that you both are in good health and spirits. I can report the same in regard to myself. I send all the best to you. See you soon."

"Although the weather was on the coolish and windy side about all of the time I was in New England, the hospitality and friendliness were very warm and cordial wherever I went. I thought that this year's Alumni Day was better than ever. I had a fine time and enjoyed meeting so many old friends again. In all due respect to the other events in a fine all-day program, I feel that the Class '15 cocktail party by itself justified my trip east. Hats off to Al and Barbara! Azel, you continue to do a first class job as class secretary. I promise to give you more help in the future by writing oftener. Fran, if it were in my power, I would make you an honorary member of the M.I.T. Alumni Association and the Class of 1915. It is no secret that no little credit is due to your help in many ways for the outstanding job Azel is doing for our Class. I am at present very busy doing the final writing and editing of the material for the July issue of the *University Club News*. You two are on my private mailing list for this publication. So long for now." The *University Club* (of Akron) *News*, which he writes, edits, publishes, and may even deliver, is a masterpiece representing a lot of work and devotion, which I sure his fellow club members must enjoy and appreciate.

Virginia (Thomas) and her husband, Paul Johnston '21, came from Washington for our class party. We were delighted to have them with us again. She wrote: "We had a lovely time on Alumni Day. I hope I never have to miss another one—but next year I think I'd rather come earlier to the class party and stay later and skip the banquet. It did my heart good to see the Class again. It was wonderful, as always, to see you and Frannie, but it was hectic. We enjoyed our visit at the apartment, too. Many thanks for everything. Paul had a swell time at the cocktail party."

Sol and Ann Schneider, with their daughter Janet and granddaughter Pam, stopped to see us on their return from a windjammer cruise off the Maine coast. Sol is enjoying his retirement.

Funny man Bur Swain, with his "associate" (wife) Joanna, was great company for us on Alumni Day. His generous "help" check was a welcome addition to our class funds. Many thanks, Bur. "I think the Class is very lucky to have two such good arrangers as Al Sampson and Barbara Thomas. My hat's off to both for a very excellent and jolly cocktail party. Joanna says no hyphen in cocktail, just olives, sometimes cherries. Our whole outing, Alumni Day, she says was so fine that she is just waiting for next year. P.S. I thought she would not care for it. (One-drink Annie.) I do hope you and Fran have had a jolly summer and got some rest somewhere. Joanna and I summered here for a change. I put in my time trying to garden—no tomatoes grow here or next door—maintenance on the house all the while with a little failing water treatment business in Jersey City. I have enough left to 'Help Azel' enclosed. By the way, I'll be in Boston or Tech for the Alumni Fund Conference September 12 and 13. I'll stop in and say hello. And a good time was had by all. Give my regards to the Boston bunch."

More honors to 1915 classmates: In June, Lucius Bigelow was awarded the Herty Medal for contributions to chemistry in the South by the Chemistry Club of Georgia State College for Women. Apropos of this, his old friend John Dalton, X, wrote: "I knew about this and congratulated Lucius some time ago. I had an invitation to attend the ceremony at the Georgia Women's College but was unable to accept. It is quite an honor for him and, as you know, he well deserved it. I expect to see him this summer. I certainly enjoyed the class party on Alumni Day and I know Ralph Joslyn did also. I hope we all can attend many more."

In a recent issue of *America's Textile Reporter* Alton A. Cook, V, Technical Director, Arkansas Company, Inc., Newark, N.J., wrote on the use of resins, softeners, and finishes used in the functional upgrading of textile fabrics—to us it means the processing of the many so-called "wash and wear" fabrics.

At the summer general meeting and air transportation conference of the American Institute of Electrical Engineers in Buffalo on June 22 to 27, Phil Alger and Fred Vogel gave papers: "The Dilemma of Single-Phase Induction Motor Theory" and "Corona and Withstand Tests in Oil," respectively.

Larry Bailey, engineering consultant, F. J. Stokes Corporation, Philadelphia, was one of several prominent authorities who reviewed the recently published book *Tooling for Metal Powder Parts*.

At its annual meeting in June, the Oil-Heat Institute of America, Inc., awarded the Aladdin Lamp to Frank Scully in recognition of his outstanding contributions and meritorious services, with the citation: "The gold Aladdin Lamp which you are presented today should be worn with pride, as it is symbolic of the highest award ever given to a member of the Institute."

On June 6, the Worcester (Mass) Polytechnic Institute awarded Jack Dalton an honorary doctor of engineering degree. Jack was their commencement speaker. Congratulations to all these classmates for their outstanding achievements and honors.

While retirement is easing some of our men out of circulation, sickness and surgery unfortunately are laying up some of the others. Otto Hilbert was rushed to the hospital in Corning for an emergency operation, which disclosed a gangrenous appendix followed by peritonitis. From his letter you can see that he is back to normal. "Thank you very much for letter and phone call. I am now back to normal and feel as well as ever and getting ready for our 50th. We had four days in New York last week and took our 11-year-old granddaughter with us as a birthday present. She wanted to do four things: (1) Go to the top of Empire State; (2) see Statue of Liberty; (3) see a television show; (4) see Wall Street. Number (4) was a little surprising. We had a perfect day for top of Empire State (Helen and I had never been). We saw Statue of Liberty from a sight-seeing line boat, which is always a delightful three-hour trip. In place of a television show we went to Radio City, where the show was one of the best we have seen. And we did go to Wall Street and visited the stock exchange. Also we took a horse and carriage ride around Central Park at her request (our first time). She wanted to eat in a different place each time and

was greatly impressed by the large number of Chinese and Indians and how well dressed the women were on Fifth Avenue. In all, a rather interesting trip."

Ray Walcott wrote that Howard King was having a bit of engineering work done on his back—probably disc repair. From the hospital Howard wrote: "It was very pleasant to get a cheering letter from you at this hospital. I will spare you all the details, but will insist on giving you the high spots. Last February I fell on my back and I guess that was when the acute trouble started; spent two weeks in a local hospital where the credo was to operate; came to New York to consult a famous neurologist, Dr. Morris B. Bender, and now find myself in one of the best hospitals in New York (Mt. Sinai Hospital), where they are giving me the diagnostic works. No date has been set for a complete cure. Best of luck to all our Class."

Charlie (Speed) Williams wrote to Al Sampson that he was having a few complications following what looked like an easy operation. Then he wrote me: "Thanks for your nice letter. The iron horse turned out to be scrap iron. It started out to be a simple operation for a kidney stone, just an open and shut case. But I finally got out seven weeks later after having had pneumonia and two or three blood clots in my lungs. One doctor told me it was something that happened perhaps once in 100 times. If that's so it's the first 100-to-1 shot I ever had pay off, and it sure paid off the wrong way. However, from what they tell me I guess I'm lucky. I'm feeling fine but too weak to do any heavy work this summer, and my drinking habits haven't been interfered with. By the end of this month we hope to go to Quoque, N.Y., and if all's well will be at the Cape the latter part of July with my children and their families. Mazie joins me in our best to Fran, yourself, and everybody."

Just when he was ready to shoot us another barrage on our 50th fund, Ben Neal went to the Buffalo General Hospital for surgery to "adjust his valves and repair his plumbing." Many of the fellows have written Ben, and with his sense of humor you can well imagine the wisecracks in his answers and letters to me. Happy to report he's back at his desk and feeling much better.

All the best to all these hospital guests with the hope that they have completely recovered and are feeling tip-top again. Take good care of yourselves.

Jim Tobey wrote: "I was sorry to hear about Ben Neal and have sent him a card today, suggesting that if he will recover promptly I will get him a job on the Royal Blue Line in Boston. Back in our student days he and I both worked summers on those sight-seeing busses, driving daily, and lecturing as we drove, to Lexington and Concord. I certainly hope that he pulls through. All is well here and we trust that you will favor us with the much-postponed visit sometime. In July we entertained three grandchildren, a week at a time for each. They seemed to enjoy it and so did we, but we required another week or so to recover. In October we will visit my daughter and her brood of four in Bangor, Maine. In all I have eight, the other four living in Rye, N.Y. I spent a couple of days last week in Lenox and Williamstown, Mass., mainly to see the exquisite Clark Art Gallery in the

latter place, which I would recommend to anyone. The college is not bad looking, either. We plan to go to Florida this winter, as usual, and expect to be in West Palm Beach, as usual, where we nearly froze to death last winter. With all best wishes to you and yours, and hoping to see you anon."

Our column closes on the sad passing of Ralph Fletcher, who died on August 11 in Providence, R.I. Ralph had been president of the Providence Gas Company from 1948 until his recent retirement in 1957. He was an active leader in many civic and industrial activities in Rhode Island and Providence. In 1939 the American Gas Association awarded him their Meritorious Service Medal for his "bravery, intelligence, judgment, and forceful leadership" during the disaster period of the 1938 hurricane and flood. Our Class sympathies have gone out to Mrs. Fletcher and her family. Watch for next month's column.—AZEL W. MACK, *Secretary*, 100 Memorial Drive, Cambridge 42, Mass.

1916

They don't come any better—week ends like that of June 9, 10, and 11 when we had our 42d reunion at Chatham Bars Inn up on the Cape. Jim Evans arrived early again to prepare the way for the main body. He appears to continue successful in his ambassadorial role because, year in and year out, regardless of perennial explosions, we always seem to enjoy the best of relations with the hotel management. A terrific on-the-beach clambake, which we shared with the Class of 1938, was all that was needed to give many the red-and-tan appearance that goes along with weeks at the seashore. Included on the 1916 roster were: Steve and Mrs. Berke; daughter Louise Berke and escort Frank Byrne; Steve and Mrs. Brophy; Jack Burbank; Howard Claussen; Harold Dodge; Paul and Kevin Duff; Jim Evans; Ralph and Mrs. Fletcher; Emory Kemp; Bob O'Brien, honorary 1916 and right-hand scribe of our President; Dave and Mrs. Patten; George Petit; Izzy Richmond; Peb Stone, Hy and Mrs. Ullian; Nat and Mrs. Warshaw; Bob and Mrs. Wilson and daughter Mrs. Dan Miles of Midland, Texas; and Jack Woods.

Here are a number of reminiscent items, some furnished from the President's office: George Petit on his knees to Steve Brophy, also the same George and his bed check at 1:30 A.M., using not a flashlight but the second decade explosion-under-the-bed technique; Emory Kemp right on hand for breakfast every morning, only a 25-minute drive from his home in Wellfleet; Jim Evans and his story about the peacock; Paul Duff and the stories with his laugh in the middle (not sure Kevin had heard all of them before); Jess Brophy and her graphic story of the water leak and the falling ceilings; Ralph Fletcher with not only cannon crackers but a terrific patchwork shirt of many colors; the golf match—Wilson, Stone, Evans, and Dodge—with low 80's golf by Wilson, the booming drives of Jim Evans, the sharp putting of Peb Stone, and the uncalled-for birdie by Harold Dodge on the 6th; Jack Woods and the walnut trees; Izzy Richmond with his early morning dip in the June-cold ocean and his shell-collecting walk along the shore (the early morning constitutional must be a habit with Izzy and probably contributes to his trim figure and his energetic enthusi-

astic outlook); the pleasant drive along the Mid-Cape scenic route from Chatham to Marston's Mills by Steve and Jessie Brophy plus Paul and Kevin Duff for a visit with Jack and Mrs. Burbank; the same trip later by Emory Kemp and George Petit; Ralph Fletcher taking off in his plane momentarily to take part in a skeet-shoot; the rousing welcome given to our Class by the Class of 1938 as we entered the dining room for dinner Saturday night; Jim Evans again with his endless energy and good humor as he led group singing and improvised lyrics to pay tribute to everyone present at the dinner; Steve Brophy and his thought-provoking talk on attitudes around the world toward us and the U.S. because of our position of leadership; and once again the outstanding blue-sky clambake with literally all the lobsters you could eat. Greetings were sent to Bill and Millie Cann. Those who attended last year's reunion will remember Millie as our delightful guest during the stag-only portion of the Harvard '37 ceremonies at Chatham Bars Inn. Acknowledgement of the message includes an expression of heartfelt felicitations to all the "gallant men" who attended our reunion.

Registration for Alumni Day at Cambridge included Steve and Mrs. Berke, Steve and Mrs. Brophy, Ray Brown, Vannevar and Mrs. Bush, Howard Claussen, Jim Evans, Emory Kemp, Ralph and Mrs. Fletcher, Percival and Mrs. Gooding, and Bob and Mrs. Wilson. The cocktail party in the Campus Room at the Graduate House had fewer than usual in attendance as a result of a number of last minute cancellations. One writes: "The class cocktail party gives a perfect opportunity for all '16 classmates to meet at one central location on Alumni Day in a comfortable lounge with the finest of liquid refreshment and a wide assortment of delicious hot and cold hors d'oeuvres. I heartily recommend that all who attend future Alumni Day activities keep the class cocktail party in mind."

Another event of note came off last May 27—a 1916 dinner at the Biltmore in New York, with some 30 in attendance. Jap Carr came the greatest distance, from Wilkes-Barre, Pa.; but perhaps the most significant was a group of seven who came by air from up New Haven and Boston way: Ralph and Sibyl Fletcher, Steve Whitney, Izzy Richmond, Bob O'Brien (honorary '16), and Ralph's pilot and copilot. Others included Walt and Mrs. Binger, Len and Mrs. Best, Jim and Mrs. Evans, Peb and Mrs. Stone, Bob and Mrs. Burnap, Joe and Mrs. Barker, Art and Mrs. Caldwell, Herb and Mrs. and son Peter Mendelson, Jack Woods, Steve Brophy, Gil Gaus, and your Secretary and his wife. Herb and Vi Mendelson had been corralled some months before, and had agreed in a weak moment to show some of their movies taken on their African safaris, the most recent of which was in 1957. It was an expert show; and even though Herb appeared to be asking his audience whether "gnu" was pronounced with a "g" or without one, he surely told a thrilling story and showed rare shots of rhinos, elephants, lions, and Pygmies. Virginia Tolson, from Joe Barker's office, attended the movie with her sister, having done wonders in contacting class members during Joe's absence. Joe and Mary Barker had just returned from a several months' lecture tour of Europe re: science and research in the U.S.A., and

Steve and Jessie Brophy from a trip around the world—the two boys appeared to be potential candidates for the entertainment portion of a dinner get-together some time this fall or winter.

Going back to the reunion, Steve Whitney was one who was really missed. Some months earlier he wrote that he was dividing his time between his Watertown home and a new place in Meredith, N.H., on Lake Winnepesaukee in the ski region where he'd be glad to receive any classmates who might be up that way.

Emory Kemp suffered a heart attack in mid-July, was in the hospital in Pocasset for a month, and as these notes left our desk (early September) he was coming along well with good assurances so long as he really takes things easy. Our first word from Emory in the hospital was most cheerful—his closing words had to do with the doctor's refusal to let him get up to put on his pajamas. The doctor told him to let the nurse do it, and Emory closes with: "Maybe I will like it here yet!" Early in July he had sent us an account with his own snapshots of 67 ("to be exact") small whales (one-tonners of the blackfish type) that were stranded near Emory's home town of Wellfleet. These whales were off Wellfleet Harbor, discovered a school of timber mackerel, and as a result the leader practically swam ashore while the other 66 (67 minus 1) followed suit. As Emory wrote: "And when they do this they bellow like small children and live for 12 to 24 hours out of water. Usually these fish are valuable for the oil contained in a sac near the head, for it makes an exceptionally high-grade watch oil. However, no takers could be found; and as the weather was quite hot, the town had to tow the 67 across Blackfish Creek to Indian Neck where there are no houses, bulldoze a deep trench and bury them, all in a great hurry for well-known reasons." From his bedside, he sent the following added items about the reunion: "The feeling of closeness and greater appreciation of each other as the reunions roll on, watching Johnny Woods enjoying his third lobster at the no-limit clambake; the spontaneity of Jimmy Evans who has no equal; and listening to Steve Brophy's interesting talk on world affairs with impressions gained on his round-the-world trip."

Flipp Fleming has kept a promise and has sent us a good account of the trip that he and Mrs. Fleming took to the Hawaiian Islands. Starting April 7 they drove to Dallas, where they spent a week with their son and his family. Then by train to Los Angeles where they had a visit with Irv McDaniel who, Flipp says, has a beautiful home in Covina Hills. They sailed from L.A. on April 30 in a tour with 21 people from southern California. In Oahu they stayed at the Royal Hawaiian Hotel, toured the island for several days where the plantation workers had been out on strike for over three months—the economy was beginning to show the effects. Next they flew to the island of Hawaii where they spent four days—excellent hotels, good food, good guides. Everyone was courteous and made tourists really feel at home. Next a flight to Kauai, three days touring and resting, then a return flight to Honolulu for the boat trip home. They arrived in L.A. on May 23, drove the coastal route to San Francisco, and took the Feather River Canyon route by train to Den-

ver, generally considered to be the most scenic of the several railroad routes across the Rockies. Flipp says it was a wonderful trip—one that he is most happy to recommend.

Jim Evans keeps us continually on our toes with bits of 1916 information from everywhere. He sent us some exceptional color pictures he took at the reunion clam-bake with a note that he's just an amateur; but if he's an amateur what's a professional? At the July New York luncheon he was singled for a bit of an honor as it became known that the little old age rule had got him and that come July 31 he was retiring from Johns Manville. Joe Barker and Joe's good secretary Virginia had found what they felt to be an appropriate retirement gift for Jim, namely some good lounging slippers bearing the trademark "Evans." Besides Jim and Joe, the luncheon included Ted Parsons, Steve Brophy, Art Caldwell, Stew Rowlett, and Harvey Stocking. These New York luncheons are held monthly in the M.I.T. Club of New York headquarters in the Biltmore Hotel, 43d and Madison Avenue, on the Thursday of the first week that includes a Monday. So if you are in New York on Thursday December 4, come to the Biltmore.

Back in the May issue, Henry Shepard told about his hobby of renovating old automobiles including the kinds we used to see in our high school days. Shortly thereafter, in the mail, we received from Henry a post card, sent to him by none other than our Dina Coleman from down Kentucky way. Dina has clipped out a portion of Henry's story which reads: "As a hobby, the only thing to be said about it is, 'It is better than wine and women.'" Dina, with exclamation points that terminate emphatic flourishes, writes: "Dear Henry: 'Taint so and never was!! Dina." The postscript from Henry reads: "Dear Harold: Thought you would be interested in Dina Coleman's bragging—he's just putting on airs, as he has passed his prime, the same as the rest of us."

Phil Baker, who is due at the next reunion, writes a letter of appreciation for the full news column—says he always looks forward especially to reading news about the members of the Class. Then: "I am always impressed with the great accomplishments of different members of the Class, and I feel most modest basking in their abilities and work. It is always sad to read of the different ones that have apparently fulfilled their missions and pass on to the new great experience. But I am likewise astounded at the class notes of such a class as 1891!" Phil adds that he hopes to get to one of the New York luncheons even though his activities find him mostly right there in Detroit.

Frank Darlington, who has been accustomed to living in Leetsdale, Pa., in the winter and in Hyannis Port in the summer, tells about staying on the Cape right through last winter. Says: "This is the first time in the 62 years I've been summering here that I've had the pleasure of seeing the Cape in all its moods—and it's charming. Certainly weatherwise we picked the best place to be, at least for the past winter." If you do any sailing or cruising around Vineyard-Nantucket Sounds or Long Island-Block Island Sounds, Frank has something you probably want. His Currentograph provides at a glance the directions and velocities of tidal currents for each hour, at strategic places in these areas. And the Darlington

Correctograph solves problems involving course steered, speed through water, course made good, and speed over bottom quickly and accurately with a minimum of effort. We asked Frank what these things were when he earlier mentioned that the slump would not affect the nautical necessities he markets. Earl Mellen reports that his 12th grandchild was born to his youngest son, Walter Roy (M.I.T. '48), who is professor of physics at Alfred College in New York State. Said in August he and Isabel were staying pretty close to New Jersey during the summer with continual trips to the Jersey shore, where they have a cottage. Reason: they were expecting another grandchild; and since their oldest daughter was involved, Grandmother must be around to make sure everything is all right and also to take care of the other grandchildren.

We have had a welcome letter from J. Nunes Correia from Lisbon. He attended the official functions on our 40th anniversary in 1956 but regrets that he did not attend our reunion at the Oyster Harbors Club. After graduation, he stayed in the U.S. only until early 1919, first with the Boston Edison and later in New York City with Western Electric. [We used to meet occasionally. Sec.] He says: "In Portugal I tried different branches of electrical engineering (power transmission, contracting, and electrical machinery sales) but finally entered the heating and ventilating business. Now I own the firm I founded 30 years ago, am keeping on the job, and for the present am not thinking about retirement. I have no special hobby but spend every week end in a country house near Lisbon, and travel for leisure when I can. Now (May 27, 1958) I am going on a 40-day vacation through Europe." J.N. says that many years ago Professor and Mrs. Dugald Jackson visited Lisbon and he had a delightful time showing them around. And recently he had a grand two-day visit with Joe and Mary Barker and son, and was especially pleased with an invitation to a luncheon where Joe delivered a wonderful speech on research work in the U.S.A. He concludes by stressing that he would be delighted to welcome any 1916 men in Lisbon.

Jack Burbank mentions that in July he saw Lew Pratt, that Lew operates the Nobska Furniture Co. in Falmouth on the Cape. Jack also sends in a clipping which reports the death of Wallace Wentworth in Suburban Hospital, Bethesda, Md., June 22. At the time of his death he was safety and fire protection engineer for the Veterans Administration. He had previously worked with the Lauretide Co. as a chemical engineer, with Du Pont, and also with Western Electric Co. for nearly 20 years. He went to Washington in 1942 as chief of civilian personnel of the War Department, Services of Supply. Two years later he became chief of the special services division of the War Man-power Commission. He was past president of the Kiwanis Club of Arlington, N.J., of which he had been a life member since 1938. He was member of the American Legion and the M.I.T. Club of Washington. He had also been a member of the Federal Club of Washington, the Silver Spring Garden Club, and the North Hills of Sligo Civic Organization of Silver Spring.

We regret to report also the death of Edward Sebben, in Denver last March 21. We have had word, too, from John Fairfield that John Eberhardt, Course II, died very

suddenly on August 16 while working in his garden. He had two serious heart attacks in April and May and succumbed to the third. His work was with the Associated Factory Mutual of Boston; several textile and woodworking companies; the Lisbon Manufacturing Co. of Lisbon, N.H.; Ernst and Ernst (industrial consulting firm of Boston); and independent consulting. Shatswell Ober, who also wrote us about John's death, said he had known John from way back when they went to "manual training" together in grammar school, then through Arlington High School and through Tech. He says John never married but found great pleasure in music, books, and his garden. His interest in music centered on piano and organ—he had a pipe organ in his home and a magnificent library of books and records. He is survived by two sisters. Shatswell goes on: "As for myself, nothing exciting. Still teaching young hopefuls in Aeronautical Engineering at M.I.T., only now not the sky but way beyond the sky is the limit. I had a small hospital date in June so could not attend the cocktail party or other Alumni Day festivities. I really enjoy reading of the travels and deeds of other '16 men in the column that you have so carefully and successfully written."

Last May, the American Chemical Society News Service told of the formation of a committee of 50 leaders of American industry and education who are sponsoring the American Chemical Society's \$3,000,000 building fund campaign. Dr. Charles Allen Thomas '24, President of the Monsanto Chemical Co., was named chairman. The class of 1916 has two members: Vannevar Bush, Chairman, Merck and Co.; and Bob Wilson, retired Chairman, Standard Oil Co. (Indiana). The fund will be used for the construction of a new eight-story headquarters on the site of the Society's present building at 1155 Sixteenth Street, N.W., Washington, D.C.

Dick Berger continues in the news up Connecticut way. Pictures in the July 6 issue of the *Bridgeport Sunday Herald* show some interesting shots of the Barnum Festival Parade on the Fourth of July. One of special interest shows Dick a-marching with cane and homely smile over the caption: "Perennial favorites: Veteran B.F. marchers are Dick Berger, left, as Harry Truman, and Bill White, as Uncle Sam. Center is Esther Trifatis, who works hard for Festival all year long as committee volunteer." A clipping from the July 17 *Bridgeport Post* gives an article to the editor signed by Dick under the heading "Cancer Danger Cited in Exposure to X-Rays." As president of Cancer Prevention, Inc., he says in part: "Leukemia (cancer of the blood) in children, which is always 100 per cent fatal and for which there is no known cure, is probably due to and caused by excessive X-ray exposure by the mother before the child is born. The cancer-causing dangers of diagnostic X-ray—of which the National Academy of Sciences has given alarming warning—should be publicised more widely, especially for potential and future mothers. This is just one important phase of sensible cancer prevention."

And now, best wishes for Thanksgiving and a note of appreciation to those who have written in. If you haven't been quoted recently in the column, why not consider yourself due? Write a little but write often to: HAROLD F. DODGE, Secretary, 96 Briarcliff Road, Mountain Lakes, N. Y.

The Class of 1917 was well represented at this year's Alumni Day activities. Those present with their wives were: Walter Beadle, Rudy Beaver, Ray Blanchard, Penn Brooks, Bill Dennen, Brick Dunham, Stanley Dunning, Bill Hunter, Stanley Lane, Lobby, John Lunn, Dix Proctor, Ray Stevens, Ed Tuttle, and your Secretary. Others present were Ken Bell, Irving Crosby, Heine Gartner, Clarence Holt, and Joshua Whetzel. Walter Beadle received plaudits during the luncheon exercises for his work as chairman of the Institute's salary fund drive committee in meeting the desired goal.

The passing of two of our classmates has been recorded since our last notes went to press. James E. Wallis, Jr., 62, retired mechanical engineer and World War One Army Captain, died on August 4 at the Veterans Administration Hospital, Bedford, Mass. Edward P. Warner, 63, president until last year of the council of the International Civil Aviation Organization—a United Nations agency with headquarters in Montreal—died at his home in Duxbury, Mass., on July 11. He was the first chief of the I.C.A.O. when it was established as a provisional body in 1945. Mr. Warner's lifelong association with aviation began in 1910, when he built a glider and flew it in an inter-collegiate meet. From 1919 to 1925 he was a professor of aeronautical engineering at M.I.T. He was editor of *Aviation Magazine* and served from 1926 to 1929 as assistant secretary of the Navy for aeronautics. During World War II he was a member of the Civil Aeronautics Board and was one of the specialists sent to London to facilitate Lend-Lease operations.

Jim Flaherty passes on a sizable clipping from the August 20 *Christian Science Monitor* which pictures Nelson Chase putting final touches on a mural, "Boston Sky Line of 1854," and tells of the three murals he has just completed for the Harvard Trust Company's Central Square Branch. Nelson is well known in New England for his murals. Six of them, 17 feet high, depicting contemporary Harvard buildings, were completed by him this spring for the Boston Harvard Club.

Ken Childs, just back from a trip to Yellowstone and Glacier Parks with Mrs. Childs, ran across a clipping telling of Ted Haviland's retirement as vice-president of the Linen Thread Co. Ted was in Boston this past winter and spring for eye surgery, from which he has been recuperating.

Al Lunn has been appointed a member of the Cambridge Redevelopment Authority, which adds one more thing to his broad business and civic activities.

Judging from newspaper items, Enos Curtin is not slowing up. The *New York Times* reports Enos and his partner winning the men's tennis doubles at the annual field day of the Bond Club of New York. The *Record and Pilot* of Glen Cove, N.Y., states that Enos "deserves, and is receiving, kudos for his management of the C. W. Post College first horse show, his past experience with the United Hunts Association having served him in good stead."

Bill Eaton, who resides in Los Angeles, Calif., sent the following to our most active regional vice-president on the Pacific Coast—Tubby Strout: "Having reached that certain age, I am retiring at the end of

August from the position I have occupied for the last 14 years, that of president and director of the Forest Lawn Life Insurance Company in Glendale, Calif. Although I graduated in Course VI, I never did follow electrical engineering. I was in mechanical engineering for several years after World War I with the Babcock and Wilcox Co. Then I switched into sales and sales management, and was with several firms in the East in that capacity. I came to California in 1940 to become associated with my cousin, Dr. Hubert Eaton, the founder and head of the famous Forest Lawn Memorial Park in Glendale. I was executive vice-president of that institution for four years, and then went with the Life Insurance Company in the position I have occupied up to my retirement. Mrs. Eaton and I expect to do a good deal of traveling in this country and abroad during the next two years. Sorry I can't report on the doings of any children or grandchildren. Our only son, Torrey, Annapolis '41, was lost at the battle of Santa Cruz in the South Pacific in October, 1942, and, though he was married, left no descendants."

Duncan MacRae wrote the following to Ray Stevens: "I hope to get around to one of the American Chemical Society meetings before long; but you can't imagine how pleasant life is out here in the woods, and how busy my duties as president of the Bel Air Rotary Club and as a member of the Harford County Metropolitan Commission keep me. Yet I try to keep them from interfering with work around the place and some study and writing on subjects suggested by Gibbs's paper 'On the Equilibrium of Heterogeneous Substances.' Reading that paper and trying to understand it has been a pleasant hobby of mine for some time."

A belated letter from John Holton to Ray Stevens reads: "I have been swamped with many activities here in Syracuse, (Carrier Corporation) including the completion and occupancy of our fine new Administration and Research Center during the winter's two worst snowstorms in February, followed by a severely curtailed organization as the result of illness of some of my key people. I did get away for a three weeks' vacation in Florida, and came home wishing that my retirement was immediately available rather than two years away. My younger son Bob, who just graduated from M.I.T. last year, has been doing well with Cowles Chemical Co., but has to leave within two weeks for a session with Uncle Sam in Texas."

Thorndike Saville is one who believes in keeping active after his retirement as dean of the College of Engineering at New York University. The University of Florida has announced the appointment of Dr. Saville as director of a science and engineering center study. The study is sponsored by a Ford Foundation grant and is designed to develop a center for graduate study and research in which the pure and applied sciences may be co-ordinated, utilizing the unique situation at the University, where the Colleges of Agriculture, Engineering, Liberal Arts, Medicine, and other professional schools occupy the campus.

Here are a few random notes: The *Berkshire Eagle* of Pittsfield, Mass., of July 19 ran a half page devoted to the Malden Bridge Playhouse at Malden Bridge, N.Y. The article states that after World War II

the theatre was reopened with Mrs. Walter Wood as director and her husband as business manager. After a job of renovation and expansion, the news article reports: "Malden Bridge now has the most modern plant of any summer theatre in the east." Ralph Ross continues his activities in retirement by being the commencement speaker at the graduation exercises at Burr and Burton Seminary, Manchester, Vt. Walter Whitman attended the International Conference on Peaceful Uses of Atomic Energy, which opened at Geneva on September 1. Loosh Hill reports (not for publication) that the Class is still solvent with one hundred plus dollars stashed away somewhere known only to Loosh.

Bill Hunter and wife were among those seeing Europe this summer. Your secretary and wife were also among the European travelers with a full-sized gale and the tail of hurricane Daisy to brighten up the voyage home across the Atlantic. Dix Proctor continues as the efficient M. C. of the class luncheons at the M.I.T. Club of New York on the Thursday of the first full week of each month. The regulars are Ed Payne, Bill Neuberger, Bert Morton, Joe Littlefield, Dix, and the writer. Ray Brooks shows up when he is in New York, and Ben Levey has recently joined the ranks.

Today's Best Smiles suggest the following:

Patient: "Doctor, what I need is something to stir me up; something to put me in fighting trim. Did you put anything like that in this prescription?" *Doctor*: "No. You will find that in the bill." Here is the golf story of the year. It appeared on the sports page of a Daytona paper. It read: "At this point the gallery deserted the defending champion to watch Miss White, whose shorts were dropping on the green with astonishing regularity."—W. I. McNEILL, *Secretary*, 14 Hillcrest Avenue, Summit, N. J. STANLEY C. DUNNING, *Assistant Secretary*, 21 Washington Avenue, Cambridge 40, Mass.

1918

Youth has such obvious assets as vigor, curiosity, enthusiasm, ambition, unfulfilled dreams. There are wondrous advantages to growing old. For one thing there is the sure possession of past years which nothing can now take away. For another, there is the opportunity to look back and see how you've done. For a third, life's hardest lessons have all been learned. Then, too, there are certain fountains of friendship from which one could always drink because they flowed ceaselessly.

Our 40th reunion at Clauson's Inn, North Falmouth, Mass., was a gentle reminder of all these truths. Present were a total of 84: Mr. and Mrs. Eli Berman, Mr. and Mrs. Carl Blanchard, Mr. and Mrs. Stuart Boyd, Johnny Clarkson, Eaton Clogher, Mr. and Mrs. Harold Collins, Mr. and Mrs. Lester Conner, Mr. and Mrs. Yale Evelev, Mr. and Mrs. Sax Fletcher, Mr. and Mrs. Mike Flett, Mr. and Mrs. Clarence Fuller, Mr. and Mrs. Don Goss, Paul and Alan Howard, Mr. and Mrs. Julie Howe, Mr. and Mrs. Harry Katz, Mr. and Mrs. Jack Kennard, Mr. and Mrs. John Kilduff, Nat Krass, Elmer Legge, Mr. and Mrs. Harry LeVine, Mr. and Mrs. Ned Longley and Bob Longley, Professor and Mrs. Alexander Magoun, Sherman MacGregor (more professionally known as Jock), Mr. and Mrs.

Robert Means, Mr. and Mrs. Hall Nichols, Gretchen Palmer, Fred Philbrick, Mr. and Mrs. Marvin Pierce, Jack Poteat, Ed Rogal, Wingate Rollins and daughter, Mr. and Mrs. Ed Rossman, Mr. and Mrs. George Sackett, Mr. and Mrs. Pete Sanger, Mr. and Mrs. Max Seltzer, Mr. and Mrs. Arthur Smith, Colonel and Mrs. Granville Smith, Mr. and Mrs. Jim Sullivan, Mr. and Mrs. Charles Tavener, Professor and Mrs. Carlton Tucker, Dr. and Mrs. Albert Walker, Mr. and Mrs. Chink Watt, Mr. and Mrs. Sumner Wiley, Mr. and Mrs. Bill Wills, Mr. and Mrs. Pete Woodland, Mr. and Mrs. Bill Wyer. Of this distinguished company only four have not missed a single reunion: Evelev, Ned Longley, Magoun, and Gretchen Palmer.

Among the interesting observations covering a parade of college reunions are the areas of similarities and changes in what the brethren talk about. Things heard at our first reunion can still be heard, like "How's your golf score?" "You haven't changed a bit," "Have you heard the story about . . . ?" and "Do you remember the time . . . ?" No longer does one hear a breathless "Did you notice so-and-so is driving a Pierce Arrow!" The new remarks have to do with grandchildren, and retirement, and it doesn't seem possible we've been out of college so long, and even, "I'm growing a bit hard of hearing." Among the best current "Do you remember when's?" was the story of that sprightly day when some wag with a fractured sense of humor put a can of beer beside Gretchen's seat in German class. As the class was dismissed Blackie called her back saying, "Miss Palmer, haven't you forgotten your medicine?" Then too, there was the time in Tubby Rogers' English class when he asked the members to suggest topics for debate. Donn Burton's deathless contribution was, "Resolved that Father John's Medicine has been more beneficial to mankind than Lydia Pinkham's Compound." This proved a wonderful exercise for Tubby's adrenal glands.

Friday evening there was a sedate cocktail party, courtesy of Bill Wills. Later George Sackett ran a horse race, at the conclusion of which Harry Katz remarked that the only time he had ever come in first was in the draft. Max and Selma Seltzer arranged a tour of the Webster Estate gardens at Woods Hole, with a trip on the side to look over a lush and nearly completed mansion planned by Bill Wills. Hall Nichols opened his summer home in Thomas Lane, Falmouth, for those who wished to take a plunge into the cold, cold Atlantic Ocean. Eli Berman took charge of the hobby show in which Ed Rossman took first prize for his exquisite work as an amateur lapidary. He collects, cuts, polishes, and mounts precious stones with the skill of a professional. Gretchen came in second with a diligent production of patchwork quilts, knitting, and other needlework, thus emphasizing all over again Don Goss's assertion that she is an "unclaimed blessing." Chink Watt, as usual, ran the golf tournament. First prize to Nat Krass, second to Stuart Boyd, Jack Kennard and Carl Blanchard tied for third, while fourth place was a dead heat between Kilduff, Poteat, Pierce, and Smith. Mrs. Carl Blanchard won first place among the ladies with Mrs. Chink Watt trailing close behind.

The banquet on Saturday night was, as always, the high light. This time, with his ever-present good taste, Sax Fletcher had us stand in silence for a moment, thinking of the classmates who have ceased to be. The meal was a delight of costly groceries and good fellowship, followed by a short business meeting which began with a polite bow to the committees which had planned the reunion. The respective chairmen were Kilduff, Sanger, Seltzer, Wills, and Palmer. Next came the reading by the Secretary of letters, portions of which will be found later in these notes. Walker read a remarkable letter which he had received from Helen Keller after her visit to the Bell Laboratories. Fred Philbrick made his Treasurer's report short and sweet. We have \$741.96 in the Coral Gables Federal Savings Bank, drawing 3 1/2 per cent. Pete Sanger made an impassioned plea for our 50th reunion gift to the Institute. This was later re-enforced vigorously by Johnny Kilduff. Once again, as has tirelessly happened at every reunion we have ever had, the fact came up of our never having been given the sheepskins the Institute promised we would have after the war. The prize for coming the longest distance to the reunion was won by Fred Philbrick, who nosed out Granville Smith by a very few miles. The call for those who have already retired was answered by Boyd, Evelev, Flett, Krass, Longley (Ned and Bob) Philbrick, Rossman, Granville Smith, and Walker. Many others are not far behind. Reporting for the nominating committee, Ned Longley proposed John Kilduff for president, Fred Philbrick for treasurer, and Alexander Magoun for secretary. These were elected by acclamation. Sax Fletcher received a well deserved vote of thanks for the excellence of his term as class president.

The speeches were delightful. Mike Flett, the inventor of detergents, talked to the subject, "Much Ado About Everything, or What's New in Cosmetics." (During the meal each lady had received an attractive compact and a box of scented soap.) He, with impish glee as his story unfolded, referred to a new cream deodorant called "Vanish." You rub it on, become invisible, and nobody knows where the odor comes from! Becoming serious, Mike discussed our responsibility now to prevent what we have contributed from being taken from us by people getting control of the country who do not understand economics. Indeed, there were many small conversations preceding Mike's talk, the gist of which was that there are three sources of power in America: big politics, big business, and big labor. Big politics lacks the courage to do what needs to be done; big labor fails to understand where it is taking us; and big business must accept the challenge, or we shall go the way of France. Marvin Pierce came next with a few remarks on why he went from engineering into publishing a woman's magazine. He said he just liked women, but was nudged in that direction by being fired from his engineering job during the depression of 1921. Sheer coercion, he called it. Hunger and his 17 grandchildren! (Can anybody outnumber that?) However, he still has a twinge every time he sees a dam under construction.

Sherman MacGregor, star of radio, television, and Broadway, discussed, "What M.I.T. Did Not Prepare Me For." With a

degree in civil engineering he began working on bridges for the New York Parkway Commission. However, the yen to become an actor, present in childhood, nourished by the Tech Show, and demanding a permanent outlet, would not down. It took two years to get his first chance on radio. There were 11 applicants for a job in Pittsburgh with KDKA. He got it because he knew nothing about the business and the manager figured he could mould Sherm his way. A year later MacGregor got fired for knowing too much! Thence back to Broadway and into a show. It only ran for two tender weeks, but ah the joy of a lifetime ambition at last fulfilled. He told us how different getting a job in show business is from industry. Do you look like what the casting director has in mind? Recently he lost out because he appeared about five years too young. At another time he was told, "You're exactly what we want. You'll be wonderful for the part," and never heard from them again. Once he was auditioned by being asked to speak just nine monosyllabic words. But he has lived a happy, fulfilled life, never expects to retire, has three grandchildren and a wife "who is even nicer to me than the day I married her, she knows me better now."

To his surprise, Magoun was asked to speak at 11 o'clock on Sunday morning. It being the Sabbath Day he chose to be serious, and talked about happiness. In order to assure better understanding he began by pointing out that pleasure was only diversion, contentment the absence of annoyance, joy the elation of a moment, but happiness a quiet inner peace which transcends difficulty, for true goodness is a happy thing. In order to achieve this he suggested that four essentials are necessary: to be your real self without pretense; to find work which uses the aptitudes you were born with to your satisfaction in self-fulfillment; to love and be loved; and finally to have faith in the future.

Many messages came from classmates who could not be present. Al Sawyer telegraphed: "Greetings from Florida to all the gang. Sorry Lillian and I could not make it this time. Expect to spend the summer in Europe." Rolfe Folsom wrote: "I sure would like to be there but it's a long way from California! Have a swell time." A longer letter, from Sam Rubin, Hotel Mark Hopkins, San Francisco, says: "Nothing in the world would please me more than to hop aboard a plane and fly east. I would love it, but as you know, circumstances beyond my control limit my inner desires and wishes. With a wife who is confined to a wheel chair I just cannot see my way clear to do what I would love to do—fly east and be with the good old friends of former years. In October, 1955, I moved to this place from the Beverly Hills Hotel. This city has a great deal to offer. It has a better climate, not as warm but is infinitely more hilly and harder on my wife. The people are more conservative; and since this was the old home of my wife and her family, we do have a large circle of friends. I am doing some writing in the field of transportation economics. It is an interesting field of endeavor." Chink Chamberlain wrote: "I wish I could be with you. It is par-

ticularly handy to Plymouth, but I have to be at a wedding in New Jersey and am leaving Friday morning the 13th with my family and will not be back before Sunday night, June 15. The best I can do is to be at the class table at the banquet on Alumni Day, so I hope I may see you then."

Herb Larner at the last minute wrote Pete Sanger: "I tried to reach you on the phone several times yesterday to thank you for your letter and express my regret that I won't be able to get to the reunion. Unexpectedly I have a meeting late this afternoon with Stanford Research Institute in your building at 60 East 42nd and tomorrow morning I must be in Philadelphia. When you return next week I'll be in to see you. Please give my warmest greetings and best wishes to everyone." From Los Angeles, Calif., on a page personally illustrated with self-portrait, cactus, and mountains, John Abrams says: "Regretfully, distance, one-man chores, and a mighty conclave of Petroleum Pioneers here on June 13 knock out prospects of joining you on the Cape. There are some good men in 1918, including the war group. I have seen some on various occasions in my meanderings around the rugged oil and mining circles. Bob Wells is in South America. The Great Sax Fletcher dropped in once, too." Ernest Bridgewater promised to raise a stein all by himself, as follows: "As I told you in the note I sent with my contribution to the Class Fund, I am not going to be able to attend the reunion, which pains me no end. I had a note from Don Goss saying that he and Ruth will be there and had to reply that we can't make it. I am sure you will have a wonderful time and, as I told Goppy, I'll have a couple of drinks, in absentia, to the Class of '18 at around 5:00 P.M. on June 14."

Pete Harrall attended all our early reunions, but has been among the missing for some time now. He writes: "This will acknowledge your kind letter of May 14 regarding the M.I.T. 1918 40th reunion which, as in times past, I had planned to attend. Just now it does not look as though I will make it. Far from being detained by the flock of sheep, as per your letter, we abandoned all operations of the farm in 1953 and only live on it now. It is still way out in the country and we love it as much as ever, but cannot afford to operate it, too. We are sitting on it watching it grow up in value, and I guess it could conceivably constitute my retirement before too many years if mayhap all else fails. Have been progressing slowly and steadily in Bendix and after being executive engineer, technical editor, commercial sales manager, and quality manager, I am now factory manager of the Friez Instrument Division. Under present conditions that job keeps me pretty busy and is more or less directly involved in my not being able to come up to the reunion. I have to be in Detroit and have two other conflicts during the week end when I get back. So, for a brief resumé. I am happily married with two fine grandsons and one son still at Johns Hopkins University, after completing his military stint. He is not going to be an engineer. Have practically stopped playing golf, but I garden and keep the farm pastures in shape. Have been active in the Society for the Advancement of Management and the American Society for Quality Control but spend most of my time 'puttering' and learning to play

my Baldwin organ. Still feel and look young, my 62 years being often misjudged at 48. 'Nuff said! Give my kindest regards to all the gang and express my regrets at not being able to be with them."

Donn Burton, the meticulous dresser who was surely among the handsomest in our class, but if memory serves correctly has never attended a reunion, says: "As I have been out of touch with most of the Class, other than the late Shorty Carr, for a great many years, there is not too much of interest to tell you regarding my activities other than that they have been headquartered in Philadelphia for the last 20 years, prior to which time I was in New York for 10 years. In common with a great many others who are in personal service businesses, I find that I am more often than not confronted with too much to do and not enough time in which to do it since, in most instances, the people who pay the bills seem to want the opinion of the number one man and not an assistant. We do an insurance business which is geographically quite widespread and requires a certain amount of traveling, although not any very extensive absences from headquarters. For some reason or other there seem to be very few 1918 men in the Philadelphia territory, at least among the members of the local M.I.T. Club in which I must admit I am not too active personally but to which I lend my financial and moral support. If you get to Philadelphia, give me a ring and let's try to have lunch together; and I will undertake to do the same sometime when I am in New York. With every good wish for an excellent 40th reunion and best regards to those who attend."

Finally, Bill Foster, who has made such an outstanding record in business and government service, and whose extraordinary speech at our 35th reunion will be long remembered by those who heard it, writes: "Unfortunately, as you may recall, this particular week end is the same week end over which we have our annual meeting of the top officials of the manufacturing chemical industry, and I have made a practice of attending those meetings each year. I did get to Westerly in 1953 by virtue of a lucky airplane connection, but getting to Falmouth would be much more difficult and I am afraid it is out of the question. There is one possible change in my plans which, should it occur, might allow me to come back to the 40th; and I would certainly like very much to do it. You may recall that the general subject of my talk in 1953 was on the Peaceful Uses of Atomic Energy, and it is interesting to see what has developed during these five years. I think my prophecies were pretty good. I am sure you will have a successful reunion, and should my plans change in any way I will certainly want to be with you." Thus closes an occasion for which we all have waited 40 years.—F. ALEXANDER MAGOUN, Secretary, Jaffrey Center, N. H.

1919

Sincerely hope that you've all had a great summer. Those of you who didn't get to the Alumni Day gathering really missed something. Among those present were: Art Blake, Maurice Goodridge, and George McCreery, each accompanied by his good wife. Also present were Paul Sheeline, Earl Stevenson, Jim Holt, Stan Weymouth, and myself.

And, speaking of Stan Weymouth, did you know that he was married on June 26 to Miss Ferne Ross, also of Augusta, Maine? Congratulations from all, Stan, and all good wishes to you both!

We hear that Oscar de Lima, in addition to his chores as president of the Roger Smith Hotels, is busy as an officer of the American Association for the United Nations. But, busy as he is, he makes time to attend the Class of 1919 luncheons which are held monthly at the M.I.T. Club in New York at the Biltmore (Friday of the first full week of the month that includes a Monday). We'd like to see more of you attending—plan to make it when you are in town. Drop into the Club other times, too, when you're here on business, and renew old acquaintances. Among those '19 men getting to the luncheons fairly regularly are: Phil Rhodes, Ralph Gilbert, Bill Bassett, Alex Wren, Jim Strobbridge, John Meader, Adolf Muller, Will Langille, Don Way, and Leo Kelley.

Arthur S. Johnson was honored this summer by the American Mutual Liability Insurance Company at a luncheon tendered to celebrate the completion of his 35th year with the company. Art is engineering vice-president of American Mutual and directs the work of the company's many safety engineers and technicians throughout the country. He and his wife reside at the famous Village Blacksmith Shop which is located in Byfield, Mass. Their son Richard is on the staff at Worcester Academy.

John O. Merrill is a partner in the architectural firm of Skidmore, Owings and Merrill in New York which, according to the July, 1958, issue of the *Journal of the American Institute of Architects*, has received a First Honor Award for the Connecticut General Life Insurance Building in Bloomfield, Conn.

Fred Given is chairman of the 13th M.I.T. regional conference, which is being held in Albuquerque on November 8. Theme of the meeting: "Engineering Our Future—The Role of the Southwest." They hope to have a good turnout for what gives promise of being an excellent conference, in an attractive and scenic region. Go, if you can possibly get there.

Ralph Gilbert's son Robert has taken his Ph.D. at Carnegie Tech and is an instructor in the graduate school at the University of Pittsburgh.

Robert Burns MacMullin has been honored with the Jacob F. Schoellkopf Medal of the Western New York Section of the American Chemical Society this year for "his original contributions to the science of chemical engineering, and for his achievements at home and abroad as a consulting engineer, particularly in the field of industrial electrolytic processes."

Kimberley Stuart of Genoa, Nev. writes that there is "No news of note. Had a good three-and-a-half months' jaunt to Australia and New Zealand last winter. Got back in time to start irrigating on this small ranch. Only 25 acres, but as I work it alone it keeps me busy and contented. Best regards to all."

Jim Strobbridge says: "Same old stuff; no kudos, no eulogies, panegyrics, encomiums, or what have you!" Bertam Southwick's card reads, "Still hanging on at the General Electric Company, with retirement imminent in about two years."

Dean Webster writes: "I realize how poor the response is from the class members, as to news. In my case, as no doubt with the majority, I really have no news worthy of reporting. My life seems to continue on a steady, almost unchanging course, always with satisfactory progress economically, good health and normal living habits, including lots of golf. Regards to all."

You have all heard I'm sure that our Class of 1919 is planning to make a special gift to the Institute on the occasion of our 40 year reunion. And you will undoubtedly want to be a part of it; so, dig deep when your solicitor calls. You'll be glad to know—doubtless do already, if you have received your copy of Class Agent Don Kitchin's letter, that the contribution you give will be posted to your credit both in the general Alumni Fund and our special, Class of 1919, gift fund. And you can spread out the payment of your pledge over a period of three years, if you like.

And let's all make a terrific effort to attend our class reunion in '59. Time marches on!

Changes of Address: Miss Clara Poppic, 21 Santa Maria Avenue, Portola Valley, Calif.; Professor Edith Clarke, Clarksville, Md.; John Stevens, Jr., 339 Lake Road, Menasha, Wis.; Dr. Marshall C. Balfour, Population Council, Inc., 230 Park Avenue, New York 17, N. Y.; Captain Edward E. Saunders, 502 Ethan Allen Avenue, Takoma Park, Md.; Kenneth A. Wright, 618 Ridge Road, Wilmette, Ill.; and Leon H. A. Weaver, 1221 Maryland Avenue, Cape May, N. J.

In Memoriam It is with the deepest regret that we must report the deaths of two of our classmates. Paul Francis Swasey died on May 12 at his home near Tunstall, Va. Paul was an instructor in mathematics at the University of Richmond, and had met with classes on the day of his death. He will be missed by all who knew and loved him.

John Pickering Putnam was killed in a crash while flying his own plane back from Quebec to Logan Airport. Put ran into fog near the Canada—Vermont border and crashed on Round Top Mountain on July 7. His many friends will miss him, and M.I.T.'s Bedford Flight Facility will miss a colorful navigation engineer.—EUGENE R. SMOLEY, Secretary, The Lummus Company, 385 Madison Avenue, New York 17, N. Y.

1920

We consider Alumni Day in June a success if the Class of 1920 meets a quota of 20 classmates. We went two over that number last June so did all right; and an even dozen of them brought their wives, so we really had an impressive representation at the luncheon and banquet. The couples included the Percy Bugbees, the Alan Burkes, the Bill Deans, the Jesse Doyles, the Jim Gibsons, the Harry Kahns, the Pete Lavedans, the John Nalles, the Bob Pattersons, the Carlton Rowens, the Dick Soderbergs. The Deans and Rowens were there for the first time, to the best of my recollection; and judging from their reaction, we shall expect to see them again. Both Bill and Carlton promised faithfully to attend the 40th reunion. Others who attended were Bill Dewey, Albion Doe, Herb Federhen, Dorothea Rathbone, Ed Ryer and his son,

Bat Thresher, Al Tomlinson, Frank Badger, and the Watson twins. I guess I forgot to mention Mr. and Mrs. Harold Bugbee.

The other day I ran into Ernie Huntress. He is back on the job at the Institute after his recent illness and is looking well. Last summer I had a very pleasant visit with Mal Lees and his charming wife at their lovely home in Ridgewood, N. J. The reason I was in Ridgewood was that my son, Holbrook, has recently married Kathryn W. Myers, daughter of Mr. and Mrs. Walter C. Myers of Ridgewood.

M. B. Littlefield joined the ranks of the grandfathers this year when John Bartlett Reichenbach was born to his daughter Jill, who is married to George S. Reichenbach, Class of '52 and assistant professor of mechanical engineering at M.I.T.

Humble Oil and Refinery Company's Baytown, Texas, refinery was blessed with two of our distinguished classmates until recently when C. E. Carlson, who was superintendent of the rubber plant, retired after more than 30 years of service with the same organization. Jimmy Harrop is now assistant manager of the refinery and is responsible for the co-ordination and blending, technical, employee relations, medical, accounting, and plan protection divisions. He and Mrs. Harrop live in Baytown, 113 Crow Road.

Morris Lipp, who is now city manager of Miami Beach, Fla., is considered one of the nation's experts on sea erosion. Miami Beach was built on what was formerly a swamp, and Morris supervised the job. For a long time he was city engineer before being promoted to the city's highest post.

Bob Warriner is now living in Westfield, Mass., address 73 Llewellyn Drive. Bunt Murphy has moved from upper New York State to New York City, address 1060 Amsterdam Avenue. Bill Nelson has moved from Drexel Hill, Pa., to Oakland, Calif., address 1880 Jackson Street. The Reverend Franklin H. Blackmer has done a reverse switch and has moved from Palos Verdes, Calif., to Urbana, Ohio. Jim McDonald is with N. A. Lougee and Company, 120 Broadway, New York. Harmon Deal has moved from Evanston to Merchantville, N.J.

The bis 40th reunion is now only about a year and a half away. It promises to be the best one we have had yet, so it is not too soon to start thinking about it and planning to be there. Hope you all had a good summer and plenty of rest and recreation. At our age, that's important. Let us hear from you.—HAROLD BUGBEE, Secretary, 7 Dartmouth Street, Winchester, Mass.

1921

Greetings and welcome to our 38th year of monthly gatherings of the Class of 1921 around The Review's friendly fireside. Thanks from all of you class officers and committee chairmen for your continued interest in class affairs and particularly from Class Agent Ed Farrand for your splendid support of the amity fund.

This is our first opportunity to report on Alumni Day on campus in Cambridge last June. Some 66 members of the Class, wives, children, and guests, including two of our honorary members from the M.I.T. Club of Cuba, enjoyed the full day of events. The early reminiscing around the registration desk gave way to the morning symposium

and then resumed at the 1921 tables in Du Pont Court for luncheon, where we enjoyed the addresses of Acting President Julius Stratton '23 and our beloved President on leave, Jim Killian '26, in his current role as Special Assistant to President Eisenhower for Science and Technology. The amazing demonstrations of the about-to-be-energized nuclear reactor, the busy Computation Center, inertial guidance, the six billion electron-volt synchrotron, the Hayden Library, and modern teaching of high school physics were splendidly done so all could understand and appreciate the tremendous strides being taken by the Institute in many fields. The members of the Class convened on Briggs Field in the delightfully cool afternoon for cocktails and a social hour prior to sitting together at the banquet in Rockwell Cage with their ladies and guests. For the second successive year, the icing on the cake was the special M.I.T. concert by Arthur Fiedler and the Boston Pops Orchestra in Kresge Auditorium.

It is most gratifying to note the large attendance at these annual class parties and the increasing participation of wives and children. It is hoped that this augurs well for a record number who will return for our BIG 40th reunion, which coincides with the 100th anniversary of M.I.T. in 1961. Among those present last June were: Mich and Mrs. Bawden; Harold Bixby; Cac and Mrs. Clarke and daughter, Eleanor, Simmons '59; Ed and Mrs. Delany; Chick and Mrs. Dubé; Harry and Mrs. Goodman; Bob and Mrs. Haskel; Roy and Mrs. Hersum; Mel and Mrs. Jenney; Algot Johnson; Paul and Mrs. Johnston; Mrs. S. Murray Jones and son, Malcolm '57; Chick Kurth; Ed and Mrs. MacDonald; Ed Mandell; Leo Mann; Dick McKay; Don and Mrs. Morse; Phil and Mrs. Nelles; George Owens; Leo and Mrs. Pelkus; Bill Ready; Harry and Mrs. Rosenfield and son, Jay '51; Ray and Mrs. St. Laurent; Steve and Mrs. Seampos; Bill and Mrs. Sherry and children, Anne, Jane, Teresa, Dickie; Saul and Mrs. Silverstein; Ted and Mrs. Steffian; Harold and Mrs. Stose; George Thomson; Bill and Mrs. Wald; Dinnie and Mrs. Whelan and daughter, Mrs. Anne Whelan Dennison; Dave and Mrs. Woodbury; and Gustavo Calleja '43 and Sra. Calleja from Havana.

A cable from Helier and Graciela Rodriguez of Havana sent regards to all and regretfully advised that they would be unable to attend. Maxine and your Secretary had the pleasure of their company at our home in Glen Ridge, N. J., for a delightful day in July, when they stopped off on their flight to Europe, the Brussels Fair, and a River Rhine trip. We spent the evening enjoying our many colored slides of the 1921 Reunion in Havana, augmented by those taken by Bob Miller, plus the color pictures received from Dug Jackson for the class files. By the time this appears in print, Bob and Helen Miller will probably have entertained Helier and Graciela on their special trip to Washington this fall.

Ed Mandell was a welcome Alumni Day visitor. He reported that his daughter was graduated from Boston University in June. Saul Silverstein had made a speaking trip to Hawaii and we hear he has recently completed his eighth trip to Europe as a member of a C.I.P.M. team. In Honolulu, he had a 1921 reunion with Harry Field, Fred King-

man, and the Reverend Will Wirt. Another traveler is Leo Mann, who has also been to Europe. Bob Miller was unable to be with us in June because his daughter, Betty, was among this year's graduates at American University. Bob and Helen are proud new grandparents—Margaret Ann Weaver was born to their eldest daughter on April 21. We are glad to have Bob visit us in Glen Ridge; and Ray reports a pleasant visit to his Manchester, Conn., home by Bob, Helen, and daughter Betty, Jo, and Jean, on their way to Taunton and the Cape. Mich and Mrs. Bawden were cruising in Maine waters last summer, but bad weather prevented their visiting Ray and Helen St. Laurent at their Vinalhaven home. Ray writes: "On our respective returns by car, we had the coincidence of getting stalled side by side for about a half hour in slow-moving traffic."

Ray has been most active in many class affairs, as usual. He visited Cambridge several times in April with Mich Bawden and Josh Crosby in connection with our BIG 40th reunion. We are pleased and privileged to announce that Mel Jenney of Boston has accepted the heavy responsibility of serving as chairman of the reunion. Remembering his excellent handling of the 35th, we are assured of most competent direction of the coming one. Besides attending several meetings of the Executive Committee of the Alumni Association, Ray was also at the Institute in September for the second Alumni Fund Conference, which was attended by Mich Bawden, George Chutter, and Josh Crosby. Josh, who is a regional chairman of the amity fund, was honored with a special award in recognition of his having achieved the largest percentage of participants in any major area. Since our esteemed secretarial colleague of the prominent Class of 1922, Whit Ferguson, is too modest to report it in his column, let it be recorded here that he presented the conferees with Canadian nickels to show the honor which the great Dominion to the north had conferred upon Technology in coining a likeness of our beaver!

Commencement exercises in June saw two members of the Second Generation Club of 1921 at M.I.T. receive their degrees. Lee B. Freese, son of Si and Mrs. Freese of Ft. Worth, Texas, received the bachelor's degree in civil engineering. Malcolm M. Jones '57, son of Mrs. Jones of Boston and the late S. Murray Jones, received the master's degree in economics and engineering. Ed Schwarz, Professor of Mechanical Engineering, was a member of the Faculty committee on commencement. During the summer, Maxine and your Secretary were glad to welcome home our son, Alfred, University of Pennsylvania '54, from almost two years of Army service in Kaiserslautern, Germany. Our family was together for a while until our daughter, Eleanor, returned to Simmons College for her senior year in physical therapy.

Reverend Williston Wirt, 4236 Likini Street, Honolulu 18, T.H., sent us the interesting booklet he promised on "The Story of the Pearl Harbor Memorial Community Church," illustrated with architect's sketches and a beautiful rendering of the striking memorial window of this living memorial to be built with donated funds to honor those who made the supreme sacrifice. Will, who began his ministry of the church in 1956 in Quonset huts, reports that they have been

outgrown and a three-acre site for the new structure has been obtained from the Navy, adjacent to the Moanalua shopping center. Will says he'll welcome contributions sent in care of the church. Francis J. Magee of Boston has retired as assistant chief engineer of the Massachusetts Department of Public Works. A graduate of West Point and Technology, he has supervised construction of notable highway projects throughout the Commonwealth. He served as a private in World War I, as a colonel in World War II on General MacArthur's technical staff in the Pacific, and he was awarded the Legion of Merit.

Edwin T. Steffian, Assistant Secretary of the Class and head of his own prominent Boston architectural firm, has been named chairman of the construction division of the commerce and industry department of this fall's campaign of the United Fund of Boston. He is a director of the Children's Medical Center and was a divisional chairman in last year's campaign. He has held office in the Cambridge Center for Adult Education, he is a member and former president of the Boston Society of Architects and a member of the American Institute of Architects. Ted was graduated from Phillips Academy, Technology, and Columbia. His memberships include Phi Kappa Sigma, the St. Botolph Club, and the Massachusetts State Association of Architects. He and Mrs. Steffian and their two sons live in Cambridge. Gonzalo C. Docal '44, President of the honorary members of the Class of 1921 and former president of the M.I.T. Club of Cuba, has written a warm letter of appreciation to Rufe and Madeline Shaw for the pictures Rufe sent him of our reunion in Havana. Gonzalo and Sarita are receiving congratulations on the arrival of their fourth daughter on April 15.

Pierre F. Beaudry now lives at 7000 Côte des Neiges Road, Montreal, P.Q. A. Ilsley Bradley receives his mail at 3813 Euclid Avenue, Cleveland 15, Ohio. Hilliard D. Cook has moved near Ray Snow at 806 Williamson Drive, Raleigh, N. C. Ernest R. Gordon is with Minuacao Hannaco Ltd., Caixa Postal 898, Belo Horizonte, Brazil. Walter C. Hagerton gives his home address as 1200 Tanley Road, Silver Spring, Md. Dr. Flemmon P. Hall is associated with the Electronics Division of Onondaga Pottery Co., 1858 West Fayette Street, Syracuse 1, N. Y. Dana E. Kepner reports his home address as 550 Alcott Street, Denver 4, Colo. Ivan C. Lawrence is back at Twin Shores, Longboat Key, Fla. George F. B. Owens is still at his summer home, 300 Maple Street, Islip, N. Y. Raymond A. Snow lives at 818 Bryan Street, Raleigh, N. C. Arthur G. Wakeman has moved from Alabama to a new home on Bayview Road, Neenah, Wis. New addresses have also been received for the following and are available on request to your Secretary: Edward W. Booth, Paul L. Deylitz, Angelo O. Festorazzi, Joseph W. Fowler, Henry A. Hutchins, William B. McGorum, Leo C. Pelkus, John A. Scott, Raphael Van Neste. Does anyone have the addresses of Captain William J. Malone, Irving D. Marshall, and Albert H. Ranen?

Herbert C. DeStaeblar sent a picture card from Barcelona (bearing two excellent Spanish World's Fair stamps for our collection) with a lovely view of the Costa Brava shore and this terse message: "Havana still has my vote, but still looking!" Another

message comes from Oliver L. Bardes, President of the Ilco Corporation, Cincinnati. Ollie is enthusiastic about the growth of his new organization. He is very active in M.I.T. affairs, most recently on the Faculty salary drive in his area. He promises attendance at our BIG 40th.

It is with profound sorrow that we record the passing of four members of the Class and extend to their families the sincere sympathy of all their classmates.

Word has just been received of the death of Dr. Arnold Carapiet Vardon in New Zealand on June 15, 1957. No further information is available.

William Forrester Clements, for many years a real estate owner and operator in the Cleveland area, died May 14, 1958, at his home in Cleveland Heights. He is survived by his wife, Laura. We are indebted to Ilsley Bradley and Herb DeStaeblar for writing. Ilsley says that he attended the funeral.

Edgar Stuart Russell died at his home in Maple Shade, N. J., on May 28, 1958. He was born in Middleboro, Mass., on February 23, 1899, and prepared for the Institute at Brockton High School. At Technology he was active in the Mechanical Engineering Society, the Masonic Club, the Technology Athletic Club, and the Glee Club. In World War I, he served as a mechanical draftsman on turbines and reciprocating engines for the Bethlehem Shipbuilding Corporation and was later a private in the Students' Army Training Corps at M.I.T. He was graduated with us in Course II. He had lived in St. Petersburg, Fla., for 20 years and was a naval architect with the U. S. Navy. He had recently been transferred to a similar post in Camden, N. J. He had invented and designed many features of past and current aircraft carriers and destroyers. Early in his career, he had taught at Gardner (Mass.) High School. He was a member of St. George Lodge, A.F. and A.M., of Brockton and of the Massachusetts Consistory. He is survived by his wife, Bertha Cross Russell, formerly of Royalston, Mass.

Robert Charles Dolle died in Cincinnati on July 11, 1958. He was born there on November 5, 1899, and prepared for Technology at St. Xavier Academy. In World War I, he was a second lieutenant of infantry. At the Institute he was a member of Phi Kappa, the Electrical Engineering Society, the Catholic Club, Corporation XV, the class baseball team, assistant advertising manager of *The Tech* and successively a news editor, the advertising manager, and on the managing board of the *Tech Engineering News*. He was graduated with us in Course XV. Shortly after graduation, he inherited from his grandfather a small goldfish hatchery, the Lakeview Aquatic Farms in Cincinnati. Over the years, he expanded it into a prosperous 60-acre business and, despite severe arthritis, he continued to be active in the business. He is survived by his wife, Helen F. Dolle; a daughter, Patricia Helen, at home; two sisters, Mrs. G. M. Wurzelbacher of Cincinnati and Mrs. Albert Ernst of Ridgefield, Conn.

Your Secretaries will welcome your news for the 1921 family circle. May you have many reasons to enjoy your Thanksgiving, including the satisfaction of having written to either Ted or Cac at the addresses below. —CAROLE A. CLARKE, Secretary, Components Division, International Telephone

and Telegraph Corporation, 100 Kingsland Road, Clifton, N. J. EDWIN T. STEFFIAN, Assistant Secretary, 11 Beacon Street, Boston 8, Mass.

1923

The 35th Reunion at The Pines in Cotuit and Alumni Day at the Institute are now past history. Those who attended either or both were richly rewarded. Sometime this fall, every member of the Class will receive a copy of the post-report, and I am sure that you will find this very interesting to read and to look at.

We are now in the process of assembling and putting on sound tract all 8 millimeter and 16 millimeter movies that have been taken at various reunions of our Class. We currently have an excellent reel put together but are very anxious to receive any and all 8 mm. and 16 mm. movies that any of our class members have taken at any of our previous reunions. We would appreciate it if those having films of this type would send them immediately to your Secretary.

The following slate of officers was elected for the ensuing five-year period at the meeting held on June 14, during the 35th reunion: President, Horatio L. Bond; Vice-president, Howard F. Russell; Secretary, Herbert L. Hayden; Treasurer, Wentworth T. Howland; Assistant Secretary, Albert S. Redway; Agent, Alumni Fund, David W. Skinner; and Representative, Alumni Council, George A. Johnson.

In the early part of July your Secretary took a vacation trip to Alaska, and en route had interesting visits with two of our classmates, spending a few pleasant hours with Hugh Nickle at his home in Seattle and running into Earle Griswold and his wife for a few minutes at the small airport at King Salmon on the Katmai Peninsula in Alaska. Earle and Esther were vacationing also in Alaska, and our paths crossed as we were leaving a fishing camp and they were on the way to it. Hope they had better fishing than we did.

Robert Sprague, Chairman of the board of the Sprague Electric Co., North Adams, has been making headlines during the last few months; he was named the "man of the year" by the Hotchkiss School Alumni Association in May; he received a citation for distinguished citizenship at Bates College in June; he made a grim appraisal of the nation's defense position on an educational television program in July; and he was one of the speakers at the dedication ceremonies of the Electronic Calibration Center at the Boulder, Colo., Laboratories of the National Bureau of Standards in August. Mr. Sprague is a consultant to the National Security Council and served as chairman of the Gaither Committee, which submitted a gloomy analysis of the nation's defenses to President Eisenhower.

If you have read the September 15 issue of *Life*, you must have read an interesting full-page story on "The Better Dream House" by John Burchard. Good-sized picture of John with caption, "Social philosopher, John Burchard, is dean of humanities and social studies at M.I.T. and a past president of the American Academy of Arts and Sciences." John is also scheduled to take an active part in the Architectural League functions during the 1958-59 season, and is scheduled to be the principal speaker

on the League's program for March 26.

The *Montclair* (N.J.) *Times* recently published quite a story on Ed Thimme and his family who, they claim, are among the leading contenders for the title of the "swimmingest family in Montclair." Ed is an executive of the Public Service Corporation of New Jersey and a member of the New Jersey Swimming Coaches and Officials Association. Evidently Ed and his family have trophies and medals galore from their swimming activities. Besides Ed, his youngest daughter, Meredith, 7; his two sons, Fred, 12, and Jerry, 14; and his oldest daughter, Diane, 17, are quite active in this sport.

Cecil H. Green, Chairman of the Geophysical Service, Inc., in Dallas, Texas, was elected a special term member of the M.I.T. Corporation to serve until July 1, 1963. He is also vice-president and director of Texas Instruments, Inc., and a director of Geophysical Service International Corporation and a trustee of St. Mark's School in Dallas.

The architectural firm of Skidmore (Louis H., Class of 1923), Owings, and Merrill of New York City received a first honor award for the Connecticut General Life Insurance Company building in Bloomfield, Conn., as announced by the American Institute of Architects. They also received the 1958 Harleston Parker Medal from the Boston Society of Architects for excellence in design and construction of the Karl T. Compton Laboratories at M.I.T.

Professor William P. Allis of M.I.T. attended the International Conference on Peaceful Uses of Atomic Energy, which opened in Geneva on September 1.

Fifty leaders of American industry and education are sponsoring the American Chemical Society's \$3,000,000 building fund campaign. Members of this committee include two members of the Class of 1923, namely: Dr. Per K. Frolich, Deputy Chief Chemical Officer for Scientific Activities, Army Chemical Corp.; and Dr. Julius A. Stratton, Acting President, M.I.T.

Henri Pell Junod of Shaker Heights, Ohio, a partner in the Cleveland firm of Pickands Mather and Co., has been appointed a group chairman in Division A of Greater Cleveland's first United Appeal.

Your Secretary is still very active in the tennis world and has played in several team matches (singles and doubles) and a few small tournaments this summer. Results not too impressive! Met Martin Tressel of Pittsburgh (am not sure whether he is a member of the Class of 1923 or 1924) at the national doubles in Longwood, where we both played in the senior division.

Since the last class notes, we are very sorry to report the deaths of three of our classmates. Walter A. Metcalf was vice-president in charge of operating services of Stop and Shop, Inc. Walter has been associated with the grocery store chain since 1946, and was appointed vice-president in 1953.

Colonel James C. Ruddell, U. S. Army, died recently at the Walter Reed Hospital. Colonel Ruddell was commanding officer at Fort Hamilton from 1948 until his retirement in 1953. Ronald H. Winde was a lumber firm executive, banker, and former president of the Melrose aldermen. He was vice-president of Winde-McCormick Company of Charlestown and president of New England Wholesale Lumber Association.

This is the first report from your new secretary. In order to make these class notes interesting, send in news concerning yourself or any other member of our Class. Your help is needed.—HERBERT L. HAYDEN, Secretary, E. I. du Pont de Nemours and Company, Leominster, Mass. ALBERT S. REDWAY, Assistant Secretary, 47 Deepwood Drive, Hamden 17, Conn.

1924

Welcome back. As this is written only six days are left before the Class of 1962 lines up to register for its first year at M.I.T. It was 38 years ago that most of us were doing the same thing. Thirty-eight years! Seems like a long time. It is. Most of us have achieved our worldly successes by now. Some of us, those who have planned well, have retired and are living the kind of life we have dreamed of for years. Here's hoping the realization is even better than the anticipation.

Whatever your present status in the work-a-day world, next June is your 35th reunion. As we've told you before, it will be at the Oyster Harbors Club on Cape Cod. The dates are June 12 to 14, 1959. Do plan to be there if you possibly can. You'll hear much more of it later from Paul Cardinal, our vitamin-propelled chairman, and his cohorts. Those who have reunied before won't miss it. Those who haven't, should.

Now for what's been going on during the summer. First of all, the travelers. You've really been getting around. Entrancing picture post cards have arrived from Ray Lehrer in Venice: "Still on the move. Find Europe most interesting and different. Antiquity is really impressive." Two beautiful pictures of Hammerfest arrived almost simultaneously from Al Roig and Mike Ameza, although no indication they were together: "Never trade this for my Puerto Rico sun"—Al; "Hortensia and I should see the midnight sun tonight at Cape North"—Mike. Both will have pictures to show us next June. And, of course, Hank Simonds has his usual collection of intriguing geisha girls (Okinawa); another completely undecipherable message, but a picture of a fierce tidal rip in (we think), Japan; a monument at Port Said; and one looking down Broadway in Kokusai. We think that's in Okinawa, but don't bet on it.

There are a lot of newspaper items. One shows Mrs. Richard T. Lassiter, complete with shovel, beautifying the grounds of Glen Ridge High School along with other members of the Women's Club: "Armed with trowels and water sprinklers, the ladies set the plants in holes dug last week by the men of the Rotary Club." No doubt Dick was one of the hole diggers. Here's one announcing that a Belgian-American industrial leader, Leon G. Rucquoi, has been awarded the Order of Leopold, highest honor bestowed by his native land, "for his role in promoting industrial relations between the U. S. and Belgium in the field of steel and metal constructions." And another honor has been heaped on Jack Hennessy. This time he's been elected a trustee of the New York Savings Bank.

Then there's one headed "Stanford Meet Hears Terman on Research." Seems Dr. Terman, Stanford's Provost, was talking to a business conference. The quotes were rather extensive, but the one that rated the

lead in the eyes of the *Electronic News* reporter was: "It is possible to lose one's shirt in research!" The *Middletown* (Conn.) *Press* carried a feature story in July on Wink Warner: "Winthrop Warner Turned Early Love of Boats into Distinguished Career." All about his work in boat designing, about 135 of them, mostly under 50 feet—fishermen, druggers, ferries, and a research boat for the U. S. Fish and Wildlife Service. He has designed more sailboats than power boats, however. Wink has recently moved to Vero Beach, Fla., where he is as busy designing as ever.

You've probably read elsewhere that General James H. Doolittle has been upped from term member to life member of the M.I.T. Corporation. No mean honor.

Retirements: this is an item that will become increasingly frequent from now on. In July Ingram Lee of Dallas (Big D, Big I—little I is still in business) retired from the insurance business. His vocation now, early French literature and bookbinding. Don't know how Ike is as a litterateur, but he certainly does some beautiful bookbinding. And in June Eric Brater retired from General Motors. No information on what Eric has taken up to keep him busy. Bill Robinson, who sent this item on, says "You and I are not so far from this." True, how true!

Another honor, this time for Earl Frazier. At Pennsylvania State there's a new library, the Frazier-Keramos Library. Other half of the name is the National Scholastic Honorary Fraternity of Ceramic Engineering. Ran into Nate Schooler's son, Jerry, in the corridor recently. He's back at the Institute again, bucking for his S.B. and Vin Lysaght's son, Vin Jr., stopped in just after he had shown up to start his freshman year. Not sure what he wants to study, but as long as he's at M.I.T. he's happy. Early in September Carl Muckenhoupt's daughter, Joanna, an Alumna ('58), was married in the M.I.T. chapel. Carl feels sure it's the first instance of the daughter of an Alumnus, herself an Alumna, being married at the Institute. He's undoubtedly right. The reception was at the Faculty Club. Not quite sure how they handled throwing the bridal bouquet. Down the stair well, or out the window? In either case it's a long way down from the sixth floor.

So much for now. You'll be hearing details shortly about our 35th next June; also about the Cornish-Mexico warm-up in February. Nish wants to assure the success of this 11th Fiesta by having a record turnout of '24 men. There were four of us a few years ago. That was wonderful, but it could be much better with four or five times that number. Keep them both in mind. More later.—HENRY B. KANE, *Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

1925

To get the new year off to a proper start, it is necessary to report on the final activities of the past year: namely, the class participation in the Alumni Day affairs of June 16, 1958. Attending the various festivities of the day were James and Mrs. Andreson; Henry Bacon; Arnold Bailey and his son Chip; Sam and Mrs. Caldwell; Fred Duncan; Dave and Mrs. Goldman; Mac and Mrs. Levine; Henry and Mrs. McKenna; Ed and Mrs. Kussmaul; as well as Doc Foster and his wife. Henry Sachs appeared at the luncheon

but was not able to stay for remaining events.

Items about a number of classmates certainly indicate activities in many fields. Mrs. Mabel M. Rockwell was named Woman Engineer of the Year last June at a banquet of the Society of Women Engineers held at the Penn-Sheraton Hotel in Pittsburgh. Mrs. Rockwell is an electrical engineer for Westinghouse Electric Corporation in Sunnyvale, Calif., and modestly stated that she did not deserve the award, although the board of judges who selected the woman engineer of the year considered 700 candidates before selecting Mrs. Rockwell. She is at present connected with the project which has responsibility for the electrical design of one phase of the Polaris launching project in Sunnyvale, Calif., where Westinghouse is building launching equipment for the Navy's missile.

In quite a different field, Frederick Winsor has recently published a collection of modern nursery rhymes entitled *The Space Child's Mother Goose*. The publisher is Simon and Schuster; and, following the lead of the *M.I.T. Observer*, it seems appropriate that an excerpt from this excellent publication appear in this column; and the section entitled "This is the Theory Jack Built" seems appropriate. It reads as follows: "This is the Space Child with Brow Serene/Who pushed the Button to Start the Machine/That made with the Cybernetics and Stuff/Without Confusion, exposing the Bluff/That hung on the Turn of a Plausible Phrase/And, shredding the Erudite Verbal Haze/Cloaking Constant K/Wrecked the Summary/Based on the Mummery/Hiding the Flaw/And Demolished the Theory Jack built."

Stanley Davis of Rockland, Mass., had an experience which I am sure he does not care to repeat, when he and two of his friends were missing in Stan's 30-foot cabin cruiser for a matter of many hours last June. They had motor trouble just off the south shore of Massachusetts; but luckily everything was corrected, the Coast Guardsmen found them; and they got back no worse for wear.

Commander J. J. Edgerley, who was recently released from extended active duty in the Navy, where he was on duty as technical director of the Office of Naval Research Laboratory at Sands Point, Port Washington, Long Island, N. Y., has recently accepted a vice-presidency of Vanguard Associates, Inc., consultants and manufacturers' representatives in the southeastern United States. Commander Edgerley is now located in Melbourne, Fla.

Tony Lauria and his wife and son were off on another one of their European trips this past summer. This time they took in some areas around London; flew on to see the World's Fair in Brussels; and then covered much of Belgium, the Netherlands, West Germany, and Switzerland. Tony, in his usual fine fashion, has supplied your Secretary with a most complete travelogue of his summer trip; and I am only sorry that space here does not permit you all to enjoy his story as much as I have.

On the serious side, several deaths have been reported. These have been very slow in reaching the hands of your Secretary. Rear Admiral William W. Hastings, Course XIII, died on November 6, 1956; Mrs. Frederick Winsor, Jr., on June 7, 1953; and John A. Chickering, at a date which has not yet appeared.—F. L. FOSTER, *Secretary*, Room 5-105, M.I.T., Cambridge 39, Mass.

Wasn't it a short summer? Our season ended with the last yacht race on Saturday, during which I became drenched and induced a cold that I am now nursing in front of the fireplace at Pigeon Cove. As a matter of cold fact (pun not noticed until written), this is the principal reason that the notes are being written on time. If class notes started with an October issue instead of November, I am sure many class secretaries would draw blanks. It's nice to have busy summers and it's nice to have class notes to return to when the summer is over.

Our Class had an excellent turnout on Alumni Day in June. You will be interested in knowing who you would have seen from the Class if you had been able to attend. Those registered were: Frederick P. and Mrs. Broughton; Laurence G. and Mrs. Cumming; Leland W. T. and Mrs. Cummings; Donald S. and Mrs. Cunningham; Robert T. and Mrs. Dawes; Robert C. and Mrs. Dean; Charles S. Draper; William H. Hamilton; Mrs. Mary A. Henry; Alton S. Heyser; James R., Jr., and Mrs. Killian; Earle D. and Mrs. Lissner; Charles P. and Mrs. McHugh; Benjamin and Mrs. Margolin; C. Marvin Pickett, Jr.; Richard H. Pough; William F. and Mrs. Rivers; Cheney and Mrs. Salmon; George W. and Mrs. Smith; Edward R. Wayne; Earl C. Wheeler; John B. and Mrs. Wilbur; Chester F. and Mrs. Buckley; Mrs. Harvey Abbott.

We always have some visitors from the Class during the summer. In the very early summer Roger Smith and his wife dropped by one afternoon during the week so I did not see them, but Ruth spent a pleasant afternoon with them. Dan Bloomberg was waiting at the house one Sunday afternoon in June when I returned from the yacht club. He came east to a directors meeting of his company in New York and was visiting his family in Gloucester. Dan's daughter came east with him, and he put her on a plane for England to spend the summer with relatives and then go on to school in France. Dan has been in the movie industry since graduation and with Republic Pictures in Hollywood for many years. A tragic bit of news came from Willard Vaughan in the early summer—one of his sons was killed in an automobile accident. I had hoped to get out to see him at Media, Pa., on one of my many trips to Wilmington during the summer months; but they were all quick business trips and I plan to make it during the fall. A change of address came in recently from Eliot Bidwell. Recalling his discussion at last year's Alumni Day during which I introduced him to Royal Barry Wills, I sent Eliot a note asking about it and quote from his reply: "After getting Royal Barry Wills's book we began looking at one-floor plans to build on our lot and ended up buying a modified Cape Cod with six rooms and two baths on the first floor and two rooms and bath on the second floor. We have about an acre of land and a brook. In a way we are doing things backward, since we have loads of room now that our family is grown-up. I don't know about you, Geroqe, but I don't feel old enough to have two sons out of college—one married with two young sons (Bruce is with me in business) and John a lieutenant j.g. in the Navy due for release in January and so far unattached. We haven't been away this summer, with all that

has to be done with a new home, but we did get to North Carolina for a week in April and spent a week in Bermuda last October on a 30th anniversary. We wanted to attend Alumni Day in June but couldn't make it this year. Hope to see you again before the class 35th. Regards, Eliot—71 Mountain Terrace Road, West Hartford, Conn."

Here's a terse bit of news that has me wondering. "Robert Wesley Sherwood '26 received a master's degree from Harvard University at Commencement, June 12, 1958." Right away I wonder if this can be Bob or possibly a son of his. I'm just thinking how difficult it would be for me to go out and obtain a master's degree in competition with the youngsters. Don't you agree? I shall follow this up and report to you later.

Again I say that anything I mention about Jim Killian is never news because all of you must read every item about him in the newspapers and in news magazines. On Alumni Day Jim looked marvelous, and so did Mrs. Killian. One bit of news that I had not picked up in the usual channels comes in a letter from the Alumni Association of Wooster College, from which I quote: "We are very pleased to tell you that Dr. James R. Killian, Jr., was given an honorary degree of doctor of science at our commencement exercises on June 9." How many honorary degrees this makes for Jim only he can tell, and he deserves them all.

We quote an announcement involving an important member of the family of our class president: "Mr. and Mrs. Harold Riley Colvin have the honour of announcing the marriage of their daughter Elizabeth Ayer to Mr. David Allan Shepard, Jr., on Saturday, the twenty-first of June, nineteen hundred and fifty-eight, Saint James' Church, New York." We also had an announcement of the wedding of Charlie Rich's daughter at St. Albans, Vt., in the early summer. Please remember to keep your class secretary on this announcement list—it helps keep the Class informed, and we like to receive the announcements, too! Having used up three longhand pages and included five quotes, I guess '26 has its share of space for the month. There's another month coming; so when you are in the post card sending mood, please send one to the Secretary. and Happy Thanksgiving—GEORGE W. SMITH, Secretary, c/o E. I. du Pont de Nemours and Co., Room 325, 140 Federal Street, Boston, Mass.

1927

Football weather is back with us even at this early date (September 12)—on the last possible minute to meet The Review deadline. As in the past, quite a few items have accumulated over the summer; and here they are.

A recent letter from William Senior gives us a summary of his activities since leaving M.I.T. "During this time I have moved around considerably, generally connected with production, methods, tooling, and tool and die manufacturing. Now that my family are on their own and, I am proud to say, very well so, this rolling stone decided to utilize a small sum of gathered moss to explore other fields. Consequently I am the treasurer of a sales concern that covers the eight adjacent counties in this Chamberlain; Dud Collier; Tay and Joe Col-

section (Middletown, N.Y.). This endeavor started from scratch in 1957 and is coming along slowly in spite of tight money. To date I have three sales engineers in the field and a very competent electronics man on sound communications. Frankly it may never develop as rapidly as I would like it to, but I am really enjoying myself as I never have before."

In July the *Boston Sunday Globe* contained an article entitled "How to Wash Car by Sound." Sounds strange, but someday sound will be harnessed to wash your family car, laundry, and even the dinnerware. The only factor right now is the high cost, says Frank Massa, president of the Massa Division of Cohu Electronics, Inc. Here's how you'll someday do the dinner dishes in the astounding time of three seconds, or the family wash in 10 seconds. Put the articles in a cleaning solution. Then press the button. The machine, or ultra-sonic chamber, will turn the liquid's molecules into a million tiny scrub brushes by agitating them at a rate of 30,000 vibrations per second. Within three to five seconds your dishes (including pots and pans) or your clothes will be microscopically clean. To get your automobile sound-washed, it would probably be done commercially. A moving sheet of liquid would pass over the vehicle, "charged" by sound as it spilled over the edge of the portable overhead tank. Massa, whose firm is in Hingham, said his company is not actually working on any of these projects but he'd be glad to develop them for anyone.

Colonel William P. Berkeley writes: "The note I received from you today moved the clock back just about three decades. A thumbnail of the last decade includes three years on the faculty of the Industrial College of the Armed Forces in Washington after a year as a student. From 1952 to 1956 I was stationed in Tokyo with the Far East Air Forces as a logistics planner and assistant deputy for materiel. In mid-1956 I left the Far East and was assigned to Air Materiel Command, and I am presently serving as the chief of the Plans and Requirements Division in the Directorate of Maintenance Engineering."

Samuel S. Auchincloss, Tracerlab President, announces that as a result of the company's strong bid for government business it has received new contracts totaling over a million and a half dollars in the last four weeks. These new contracts are for research and services utilizing the chemical, physics, electronics, nuclear, and X-ray specialists of the firm and represent a wide range of government business.

In the July, 1958, issue of the *Journal of the American Institute of Architects* are announcements of a first honor award for the Stuart Company building in Pasadena, Calif., and an award of merit for the United States Pavilion, Brussels, Belgium. Architect: Edward D. Stone. Also pictures and a bit about the plan and construction of the buildings.

The *Springfield (Mass.) News* announced an exhibition of John C. Parker's paintings. Parker has been tabbed as the country's number one "ghost-chaser," and is an artist and architect by profession and a ghost-chaser by avocation. His family moved to Newburyport in 1913, where his father bought the famous Hale House, which is still the old Parker homestead. The legend of the ghost of the onetime visitor to this

house returning in search of his top hat, which is supposed to be nailed under the window seat in the "blue room," intrigued Parker when a youth. The large blind attic in the Parker homestead in Newburyport made a fruitful hunting place on rainy week ends for oriental gold coins, interesting colonial antiques, old books, maps, letters, and so forth. His water colors and drawings now on exhibit are proficiently executed and show Mr. Parker's ability as an artist, and the haunted houses selected for representation on canvas are distinguished examples of colonial houses in which he specializes so that the exhibition has unique value in the architectural field.

Lee Miller retired from the New York Telephone Co. in April after nearly 31 years of service. "Immediately I accepted a job as purchasing agent and director of building operations at Capital University, Columbus, Ohio. This is an excellent university, owned by the American Lutheran Church; and it has a total enrollment, with the graduate school, of about 1,700 students." His new work involves a proposed building program for the next 10 years of six to seven million dollars.

It is with deep regret that we record the death of Kenneth F. Beckley, who was found dead near his summer home at Holiday Point, Sherman, Conn., on May 9 of this year. He was superintendent of the Housatonic Hydro-Electric division of the Connecticut Light and Power Co. —J. S. HARRIS, Secretary, Shell Oil Company, 50 West 50th Street, New York 20, N. Y.

1928

On June 13, Friday, the stately Marshall House, York Harbor, Maine, opened its doors and hospitality to the Class of 1928. The beautiful lobby, newly decorated, was the principal scene of the first day's activity as classmates, their wives, and family members arrived for the reunion week end.

There were a few on hand early in the afternoon, pardonably eager, no doubt, that nothing be missed. But as the day progressed the volume of registrations grew and the spirit of the meeting took hold. When the Roland Earles entered there was a brief stir and a bright splash of color. Roland was carrying, and nearly hidden behind, two enormous bunches of hand baskets decorated with brilliant red flowers. These were the ladies' favors and were later handed to them as they signed in. Also each arrival received a snappy yachting cap in white, black, and gold with proud '28 numerals as insignia—they were worn everywhere. Outside, the first evening, it was Friday the 13th and dismal weather. Inside, however, all was cheerful with a fire burning on the lobby hearth. 1928 had gathered and the party was off to a good start!

In all, there were 153 registrants consisting of 71 classmates, 56 wives, 14 sons, 8 daughters, 1 mother, and 3 guests. Here is the full list: Frances and Gil Ackerman; Helen and Max Bearon; Bill Bendz; Rose and Maury Beren; Ruth and George Bernat, and sons Eliot and Bob; Ethel and Carl Bernhardt; Sydney and Sid Brown; Ethel and Henry Buntschuh, and son Chuck; Marjorie and Gene Boehne, and son Bill and daughter Betsy; Lucille and Vin Caputo; Bill Carlisle; Ruth and Chris Case; Jack Chamberlain; Dud Collier; Tay and Joe Col-

lins; Frances and Jack Connelly; Dorothy and Bob Cook; Barbara and Earl Crawford; Helen and Deck Dimock; Gabe Disario; Frances and Jim Donovan, and sons Jim and Andy; Catharine and Ben Draper, and son Paul; Helen and Roland Earle; Elizabeth and Carl Feldman; Gertrude and Don Francis; Martha and Don Fraser, and son Malcolm and daughter Suzanne; Dorothy and Carney Goldberg, and son Robert; Lazare Gelin; Hank Gunning and mother; Helen and Bob Harris, and son Bobbie and daughters Beth and Judy; Irene and Ed Hartshorne; Ethel and Thurston Hartwell; Esther and Dave Haynes; Anne and Dick Hildick; Florence and Ralph Jope, and son Teddy; Art Josephs; Don Kennedy; Louise and Ernie Knight; Bob Krummel; Gertrude and Henry La Croix; Kathleen and Bob Larson, and daughter Taffy; Lillian and Tom Larson, and son Bob and daughter Linda; Janet and Fred Lewis; Josephine and Mac Mackenzie; Bill McClintic; Marjorie and Mac McDermott, and son Bob; Bob Murphy; Bill Murphy; Mary and Art Nichols; Gladys and Dave Olken; Maxine and Karl Otte; Anne and Olap Palo; Mary and Max Parshall; Ted Pierce; Madeline and Hal Porter; Betty and Claude Rice; Irene and Owen Rideout; Edythe and Dick Rubin; Jo and Ed Shiepe; Pamela and René Simard; Carroll Smith; Katherine and Walt Smith; Catherine and Don Sturznickie; Dorothy and Herm Swartz; Edith and Frank Sweeney; Susan and Jim Tully; Anna and Tib Tibbetts, and daughter Jackie; Grace and Ed Ure, and daughter Pat; Edith and Ray Wofford; Ruth and Abe Woolf, and son Burton; Velma and Charlie Worthen.

Guests of the Class were: Esther and Harold Edgerton '27; and Ted Wood.

Friday night was ideal for movies and slides. A 15-minute film taken at our 25th reunion in Cambridge brought back memories and chuckles. Then there were some excellent color slides shown and discussed by several of our traveled classmates.

Saturday was a beautiful day and good weather continued through the week end. The golfers golfed, the putters putted, the hikers hiked, and Bill Carlisle took a swim in the ocean. Other groups visited interesting historic spots in York or explored shops in the attractive old town.

Nearly everyone went on the bus tour. Our reception at Pease Air Force Base was most hospitable and gracious; the visit was highly interesting and instructive. It left most of us with a renewed respect for and sincere appreciation of Strategic Air Command, and the country's air defense. At Portsmouth Naval Shipyard we were given welcome and an excellent talk by Captain Ramble, the Yard's planning officer, and a firsthand introduction to some of the Navy's submarines. Several ships were in drydock under construction or repair, and we were privileged to see one of the atomic powered subs at close hand. The high point was a visit aboard the Reserve Training Submarine, *S.S. Haddock*. This gave many of us landlubbers our first and perhaps only chance to inspect the inside of a submarine.

After the long busy day you might think that your old classmates and their mates would have to slow down for the evening. Sir, you couldn't be more wrong! The dinner dance proved it! When the doors opened

they swarmed in under full steam to the tune of "Hail, Hail, the Gang's All Here." And there was no letdown of spirit or action until the orchestra went home. The food met every boast the house could make—from sparkling Burgundy to the last dish of dessert. It was Ralph Jope's birthday, so he was favored with a cake, lighted candle, and the birthday song. Recognition was also given to wedding anniversaries for the Carl Feldmans, the Ben Drapers, and the Sidney Browns. During orchestra breaks Ted Wood entertained with songs and his guitar. On one round he was joined by Harold Edgerton, then by Bob Harris, all to the delight of the crowd. Later in the evening Ted led group singing in the lobby and Florence Jope's 30-year anniversary song for '28 got a good workout.

During the night Sputnik III passed over the Marshall House. And would you believe it?—several dozen stalwarts showed up on the lawn in nightrobes to watch!

The big event of Sunday was the afternoon outdoor clambake. This was preceded by a pleasant social hour also held outdoors in a beautiful setting and in perfect weather. One hundred and fifty happy, chatting, and shouting people can make a lot of noise; but the decibel level dropped almost to zero while the business of serious eating was in progress. We can think of no higher tribute to the delicious feast of lobster, clams, chicken, and corn placed before us. York's famous clambake expert Bill Foster lived up to his reputation fully. He deserved and received a vigorous round of applause.

A business meeting had been scheduled for late Sunday afternoon. It turned out to be another very pleasant social hour with one primary topic of discussion: "When can we have another reunion?"

In the evening, and as a most fitting conclusion to three wonderful days, Harold Edgerton showed his excellent color movie films "Under the Mediterranean" and "Camera Explorations in the Sea." He carried on a running discussion that was both instructive and entertaining, then spent a busy period answering questions.

On behalf of the Class we take this opportunity to thank our reunion committee for a fine job well done. Those who gave of their time and effort were: Walter Anderson, George Bernat, Bill Carlisle, Jack Chamberlain, George Chatfield, Frances and Jim Donovan, Helen and Roland Earle, Bob Harris, Florence and Ralph Jope, Art Nichols, Dave Olken, Kay and Walt Smith, Herm Swartz, and Abe Woolf. Jim Donovan managed the finances in his usual effective manner; Ralph Jope, despite heavy Institute demands on his time, arranged the visits to Pease Air Force Base and Portsmouth Navy Shipyard and served as Hospitality Chairman; Bill Carlisle handled the bus trip; Bob Harris was responsible for sports; Herm Swartz supplied camera and projection equipment; Art Nichols was the York Harbor area expert; the ladies' committee was headed by Florence Jope and Frances Donovan; and your secretaries covered publicity.

We must emphasize that the ladies were particularly effective in their participation. Frances Donovan was responsible for selecting and decorating the basket favors with help from Helen Earle and Florence Jope. Florence also wrote the clever 30-year reunion song. Kay Smith assisted gener-

ously in the publicity work. All gave suggestions that helped make the meeting the success it was and were on hand to welcome and register those who attended.

We are particularly grateful to Ted Wood and to Esther and Harold Edgerton who joined with us so graciously for the reunion and added so much with their talents and presence.

At this time we regret to report the death of two classmates. James Sampson who studied in Course II, died on August 10, 1958; James R. Glazebrook, also of Course II, died in New York, August 23, 1958. —GEORGE I. CHATFIELD, *Secretary*, 100 East 42d Street, New York 17, N. Y. —WALTER J. SMITH, *Assistant Secretary*, 15 Acorn Park, Cambridge, Mass.

1929

Again it is my unhappy duty to report the deaths of two of our boys. John Booth passed away on June 18 at his summer home in Ocean City, N. J. We all remember John as a coxswain of the junior varsity crew. He was with the Sun Shipbuilding and Dry Dock Company in Chester, Pa., a designer and authority on sailing craft. John is survived by his wife Irene and his father. Also, Jim Hogan was the victim in a hit-and-run accident in Cincinnati early in July. He was with the Vulcan Copper and Aluminum Company in Cincinnati. Jim is survived by his wife Agnes, a daughter, and his mother.

A short note from Bill Aldrich, who reports he has his family all primed for a trip east next June for the reunion. It will be good to see him. And a note from Art Marsh, who reports he is now in business for himself, promoting the sale of metal finishes, sealants, and adhesives. Art is in Millington, N. J., and travels a great deal of the time. Art also reports making plans for the 30th in June. Léon Rucquoi was recently awarded the signal honor by the Belgian Government in being made "Officer de l'Ordre de Leopold" for his service to Belgium in promoting relations between the U.S. and Belgium in the field of steel and metal constructions. Indirect word that Bill Jones is with the Carbic Color and Chemical Company in Charlotte, N.C.

On the week end of June 28 and 29 most of the members of the 25th reunion committee and their wives were the grateful guests of Joan and Wally Gale at the Bald Peak Colony Club at Melvin Village, N. H. After hearing Frank Mead's rundown of some 24 possible locations for the 30th reunion—in Connecticut, on the Cape, on the North Shore, in New Hampshire and Maine—it was overwhelmingly voted that the 30th should be held at Bald Peak. It is an ideal spot, high above Lake Winnepesaukee and surrounded by mountains—golf, tennis, antique and gift shops for the girls, boating, fishing, lakeside sun bathing, swimming (for those who can take it), and ample opportunity for group sports, both indoor and out. The clubhouse and the surrounding cottages are beautifully appointed and the cuisine is excellent. Incidentally, we are the first reuning class to be afforded the opportunity of reuning at the club, 100 miles from Boston, most of which is over turnpikes. We are sure you will all agree after the week end of June 13 and 14 that the spot was ideal.

Shortly after reading these notes, you will receive the first questionnaire on the reunion. I trust you will return it as promptly as possible and that all of you will say you're attending.—FISHER HILLS, Assistant Secretary, 62 Whittemore Avenue, Cambridge 40, Mass.

1931

Hope you all had a pleasant summer. Living near the Sound as we do, I manage to get in a lot of swimming as well as some clamming and fishing.

It's a pleasure to report that Claude Machen who, you will remember, was seriously burned last January, is coming along nicely. He was in the hospital for about three months and has made excellent progress since he returned home. Claude has everyone's best wishes for a complete recovery. I know he would be glad to hear from any of you. His address is: 38 Sawyer Road, Wellesley Hills 82, Mass.

A letter from Ed Blake, dated September 8, says: "I got back from New England only last night, after our vacation. Harriet and Mary had come back a week earlier because of school. We had had a fine time all together with some of our relatives in Maine, and this year went over to Nova Scotia for our first trip there. Harriet and Mary had preceded me east and had been down in Chatham, on the Cape, for a week or so with her sister. So we are back at the old stand, getting used to the harness again while still relaxed and feeling fit."

A note from Marcel Aillery calls attention to the M.I.T. Class of '31 luncheons every third Monday in the month. They are held at the M.I.T. Club (Biltmore Hotel, Madison Avenue and 43d Street, first floor) at approximately 12:15 P.M. Luncheon dates for the rest of the year are: October 20, November 17, and December 15. If you're ever in New York on these days, plan to attend the luncheons, where you'll have a good time with our other classmates.

Harry Kamy is back in the United States. He writes: "After a two and one-half year assignment in Japan, I have now been assigned to the Transportation Research and Engineering Command." His new address is: Trecom, Fort Eustis, Va.

A note in the *Boston American* for June 30, 1958, tells that Harry Parris has been awarded a fellowship in science at Harvard. He has been teaching physics at Rindge Technical School since 1940, and prior to that had taught in New Jersey.

A clipping from the *Nashua*, (N. H.) *Telegraph*, dated June 4, 1958, tells that Dr. George A. Catanzano recently purchased a home at 384 Main Street, in Nashua. After leaving Tech Dr. Catanzano attended Palmer School of Chiropractic in Davenport, Iowa, and interned at the B. J. Palmer Chiropractic Research Clinic. He married the former Vivienne Casey of Cambridge, Mass., and they have four children: one in the Air Force, one presently a student at the Palmer School, and two still at home.

J. Whitney Perry has coauthored a book on information resources. It is based on the proceedings of a special meeting of the Council on Documentation Research held at Western Reserve University on February 3 and 4, 1958.

Joe Lyman and Bob Saunders have been appointed consultants for the Airways Modernization Board, according to a clipping from the *Electronic News*, forwarded from M.I.T. Word from the same source tells that B. J. Gedrewicz has received a patent award from the General Electric Company. He is with the Small Aircraft Engine Department, General Electric Company, West Lynn, Mass., and his home address is 160 Main Street, Lynnfield Center, Mass.

Others in the news include Lawrence F. Stauder, who gave a paper on "Linear Rate Generator" at the summer general meeting and air transportation conference last June. This was sponsored by the American Institute of Electrical Engineers.

As you undoubtedly know, Jim Fisk has been breaking into the news again. Dr. Fisk, who is vice-president of Bell Telephone Laboratories, led the delegation of Western scientists during the Geneva talks on the various means of detecting atomic explosions in the event that agreement is reached on the suspension of atomic tests. On this subject, the July 4 issue of the *New York Times* read as follows: "If the technical disarmament talks in Geneva lead eventually to the beating of atomic weapons into plowshares, it will be partly the work of a lean-faced scientist whose favorite pastime is plowing. As chairman of the panel of Western scientific experts at the meeting, Dr. James Brown Fisk will be plowing a most difficult furrow in a field that has confounded the diplomats and scientists alike. . . ."

"His associates over the years describe Dr. Fisk as a calm, deliberate, unassuming man who is sensitive and tolerant of others' points of view. No table-pounder, he is inclined in negotiations to sit back and let the other side express its views before coming in with his arguments.

"If the Communists' objective is to rile the United States delegation into a political discussion, they will probably find Dr. Fisk a deceptive target. As one of his business superiors observed: 'Dr. Fisk has patience to the extent that it gets on my nerves, he is so tolerant of others' views.' This observation was accompanied by the comment: 'I have never seen a more level-headed scientist.' With his widely acknowledged scientific and executive competence, Dr. Fisk has been a behind-the-scenes force in reappraising and reshaping the nation's scientific program since the first Soviet satellite was launched. For the last eight months he has spent much of his time in Washington as one of the two chief deputies of Dr. James R. Killian, Jr., President Eisenhower's special adviser for science and technology."

A note from The Technology Review tells of Gil Roddy's election as Alumni term member of the M.I.T. Corporation, to serve until July 1, 1963. The note goes on to say: "As president of the M.I.T. Alumni Association during 1957-58, he also served on the Corporation last year. He is a trustee of the Boston Museum of Science and the Home Savings Bank of Boston."

Alumni Day was, as usual, quite an event; and the Class of 1931 was well represented. Among those attending were: Mr. and Mrs. Samuel S. Arlen, Mr. and Mrs. Lawrence B. Barnard, Mr. and Mrs. Myron F. Burr, Dr. and Mrs. Norman D. Fitzgerald, Mr. and Mrs. Richard K. Baltzer and daughter,

Harold D. Gurney, Mr. and Mrs. Edward B. Hubbard, Mr. and Mrs. Albert L. Kaye, Mr. and Mrs. Sydney R. Miller and daughter, Mr. and Mrs. A. Russell Pierce, Mr. and Mrs. Bryce Prindle, Mr. and Mrs. Howard L. Richardson, Mr. and Mrs. Gilbert M. Roddy, Mr. and Mrs. L. Kernick Snowden, Mr. and Mrs. John R. Swanton, and Yours Truly.

It was with considerable regret that we learned of Roy Chamberlain's death last June. Roy was president and director of the Tankers Company, Inc., a former admiralty lawyer, and prominent for many years in shipping circles.

A news release in June stated that Columbia Broadcasting System is awarding unrestricted grants to 11 privately supported colleges and universities, from which 17 C.B.S. executives were graduated. The grants are established under a formula which automatically selects executives meeting certain specified standards, including length of service and level of responsibility. M.I.T. was included because of John M. Hollywood's contributions. He is scientific aide to the president, C.B.S. Laboratories.

Changes in address reported since our last letter include: N. John Anton, 25 Acorn Way, P. O. Box 185, Kentfield, Calif.; Edward F. Coy, 123 Laredo Way Northeast, St. Petersburg 4, Fla.; Professor Donald L. Dunklee, 42 Riverside Drive, Ft. Garry, Winnipeg 9, Manitoba, Canada; Vice Admiral Clarence E. Ekstrom, Bureau of Personnel, Navy Department, Washington 25, D.C.; Dr. Norman D. Fitzgerald, P. O. Box 5046, Abilene, Texas; Dr. Laurence C. Hicks, 1109 Carlisle Street, Natrona Heights, Pa.; Colonel Walker W. Holler, 907 North Gregson Street, Durham, N. C.; Captain George C. Humphreys, 8624 Melwood Road, Bethesda, Md.; Joseph McBrien, 619 Richardson Avenue, Martinez, Calif.; Raymond W. Miller, Old Northfield Road, Thomaston, Conn.; Colonel Wiley T. Moore, 101 Marguerita Avenue, Santa Monica, Calif.; Carlton T. Nicholson, South Lane, Orchard Park, N.Y.; John R. Outt, General Electric Company, Room 6894, 3198 Chestnut Street, Philadelphia 4, Pa.; Myrle M. Perkins, 2273 Clay Street, San Francisco 15, Calif.; Edward R. Sangster, Van Vorst Road, Burnt Hills, N.Y.; Dr. Valerie Schneider, Route No. 1, Box D-2, Mission, Texas; Clifton A. Smith, 370 Solana Drive, Los Altos, Calif.; Rear Admiral Arnold E. True, Box 300, Star Route No. 2, La Honda, Calif.; Robert F. Vasey, 60 Crestwood Drive, Dale City, San Francisco 25, Calif.—EDWIN S. WORDEN, Secretary, 9 Murvon Court, Westport, Conn. GORDON A. SPEEDIE, Assistant Secretary, 90 Falmouth Road, Arlington 74, Mass.

1932

Lots of new to report after the summer vacation. Many of you have sent in information on the cards which Bob Seiple distributed with the class president's letter, and others have been kind enough to write to me. Keep up the correspondence so that we can keep alive the spirit of the Class regenerated at the 25th reunion!

Dick Stewart, XVII, has been elected president of the American Brass Company in Waterbury, Conn. Dick has been with the Anaconda organization since 1935, when

he entered the legal department of one of their subsidiaries. In 1949 he was appointed counsel for the Anaconda Company in New York, and in 1956 he became director of industrial relations. Dick surely has done well in combining his engineering and law training. I am sure that all of us wish him the best of luck in this very responsible position. Otway (Dub) Rash, III, has been promoted to the position of regional vice-president of Carling Brewing Company in addition to being general manager of their Belleville, Ill., plant. We hope that he can use his position to persuade the New England branch of that company to provide oceans of free beer for our next reunion.

I was talking with Tom Sears the other day, and he expressed the hope that the regional vice-presidents of our Class could become active and begin some regional class meetings. If any of you do have these meetings, please send in your reports to me so that I may include them in The Review. Carl Wahlstrom, IX-B, is going to try to get some of the gang together in southeastern Texas. He wrote that he and his wife had a two-month trip to Europe in the late spring to visit Holland, Belgium, Switzerland, Italy, Sweden, Denmark, and Norway. He paid a visit to the old home town in Norway where his mother and my mother were born. A trip like that would be very much to my liking. Tom Sears is still making his semiannual trips to England to carry out his contacts with Lloyd's of London at firsthand, as well as to have those nice long rests on the trans-Atlantic liners.

Art Marshall, XV, reported that life will never be the same in his home in Springfield, Mass., because he took his wife on a trip through Europe and the Middle East and stopped off at Barcelona on their tour of Spain. I quote: "We were met at the airport in Barcelona by Juan Serrallach in true European fashion. Juan kissed my wife's hand and delivered flowers to her. During three fascinating days at Barcelona, Juan and his wife, Aenne, were most hospitable; and they not only made our visit very interesting, but they made Spain come alive." Art has a son who is an ensign in the U.S. Navy and another son attending the Ward School of Electronics in Hartford. Another European traveler is Leo Tyburski, I, who is with the American Chain and Cable Company in Philadelphia. Leo sent his wife and two children to Europe for nine months and then joined them for a short spell. He is also a commander in the U.S. Naval Reserve.

George Baker, XV, is manager of buildings for the Boston Wharf Company, a large industrial real estate organization which owns and operates 90 buildings near the South Station area. George has a tremendous job converting warehouses over to office buildings and redeveloping the old area of the woolen industry, now pretty much disappeared, into a modern area of light industries and commerce.

Fred Henderson, XV, has left the faculty of Northeastern University in Boston to join the faculty of the Northeastern Junior College in Sterling, Colo. The name is the same, but there is no connection. He will have charge of organization of technical institute type courses to meet the growing demands for technicians in the Mountain States area. Other changes of address include Ben Wilbur, II, who writes: "After enjoying

for 10 years a century-old Southern colonial house in the historic village of Quaker Street, Schenectady County, N.Y., we are being moved by the General Electric Company to Pittsfield, Mass." F. Carlyle Roberts, Jr., XI, has moved to Kansas City as regional training officer of the U.S. Public Health Service. His son has just completed college and is headed for the Army; he also has two daughters in college now. Wendell Bearce, III, is far ahead of us as he reports grandchild number three. He is an engineer with the Hanna Coal Company and has been occupied with the construction and operation of the new coal pipeline from Cadiz, Ohio, to Cleveland.

We have some of our Alumni with sons at M.I.T. These include Bob Strong, XV, and Larry Wagner, I, with two sons. Let me have anymore information on this that you can give me, including grandchildren at M.I.T.

Erskine Roberts, IX-B, sent me a card: "After a quarter of a century teaching, designing and planning in industry, practicing professional engineering with construction and consultant work in Indianapolis, I have returned to public service with the federal government. Located in the Public Housing Administration regional office in Chicago, I now serve as a staff engineer covering local housing authorities in a 10-state midwest region—constructing, consulting, and maintaining housing projects." He has two children, one attending Indiana University and the other in high school in Indianapolis. Through the press clipping bureau your Secretary received a long newspaper article from the *Chicago Tribune* describing many of his activities, including a citation from the governor of Indiana for "meritorious service, and for loyalty and devoted service to the people of the state of Indiana." The article was headlined "Negro Public Housing Aide is Top Engineer—Erskine Roberts' Work Widely Acclaimed." I am sure that all of us are pleased to see that one of our classmates is making the headlines by such diligent performance of duties in the engineering field.

More news next time! Please keep sending me the material.—ROLF ELIASSEN, Secretary, Room 1-138, M.I.T., Cambridge 39, Mass.

1933

A lot of water has gone over the dam for many in the Class since the reunion, but the memories of the good times we had will last a long while. There has already been some agitation for having another one real soon. Since you all received a list of those who attended the reunion, it is perhaps sufficient to say that 117 members of the Class, with their wives, stayed over for Alumni Day on June 16. We were very happy to welcome several who could not be with us over the week end.

Over the summer your Secretary has received a basketful of notes, only a few of which will be included this month. Several concern Don Fink, who has been making speeches around the country as president of the I.R.E. Athelstan Spilhaus has also received a good press for his activities in scientific educational matters. We are indebted to Beau Whitton for a quote from our President, Pete du Pont, who offered these words of wisdom in a speech last spring: "I am informed the current saying

in Washington is that if you are not confused, it is because you don't understand the problem."

Congratulations to Cy Hapgood; the letterhead of his firm now reads "Davis, Hoxie, Faithfull, and Hapgood."

We look forward to welcoming this fall Edward A Feustel and Charles W. Niessen, sons of Fred and Bill respectively, who enter M.I.T. as freshmen. Your Secretary gets a real pleasure from greeting the sons of classmates.

We are grateful to Katharine Carman, who is a geologist in Denver, for bringing us up to date on Gene Cary. Not to be outdone by the rest of the Class, they had their own reunion in June. Gene's state of health is excellent, from all reports.

We regret to report two deaths among our classmates over the summer. Gordon Pearson drowned while swimming at Sao Paulo, Brazil, where he was with Colgate Palmolive Peet; and Frederick D. Wells died here in the Boston area. Fred had been development engineer at the Boston University physical research laboratory. Ed Rowell, who was here at reunion with his wife, has returned to Saudi Arabia. We are glad to report also that Preben Oldenburg has recently transferred from Venezuela to the same company Ed is with and in the same city. We would greatly welcome any word from you on your present activities.—R. M. KIMBALL, Secretary, Room 3-234, M.I.T., Cambridge 39, Mass.

1934

Hank Backenstoss opens the class notes for our 25th alumni year with this letter:

"Fellow Classmates, It is hardly possible to picture to you who will be reading this in November the stimulation we experienced in May and June as final Alumni Fund returns for 1958 were tabulated. The Class really did a job! My hat is off to all of you who made it possible. We ended with a total of nearly \$20,000, bringing our scholarship fund to something over \$75,000, including prior years' contributions and other benefactions. If this surge continues—and that depends on all of us—we will surely make the \$100,000 mark.

"What has been responsible? One quite large payment is a principal factor. The broadening of our participation is another. Two hundred and eighty-five men, or 41 per cent of the Class, made contributions. Some 33 men contributed sums of \$100 or more. Many other upgraded substantially over previous contributions.

"I believe I have written in these columns about the significance to each of us of the continued excellence of M.I.T. as an institution in our society. It may be worthwhile to pause a moment and, with our accomplishment of last year in mind, reflect on what an active Alumni body such as ours means to the Institute. No need to mention the rapid disappearance of the days when a few individuals could, by themselves, provide the financial support for the growth of an educational institution. Alumni groups everywhere are being asked to help fill this void, and they are responding to it. The Class of 1934, in its relationship to the Institute, is not an isolated example. When we were at Cambridge general participation by Alumni, financially speaking, was not vital. Even as late as 1954, the Alumni Fund amounted to

slightly over \$200,000, of which 209 members of '34 contributed only \$3,945. In 1958 the Alumni Fund amounted to nearly \$450,000 with 285 classmates contributing \$19,580. Even more impressive is the fact that some \$2,000,000 of additional gifts were made directly to the Institute by the general Alumni body, of which '34 men contributed another \$20,000. You may make your own slide rule comparisons from these figures. I think they show that the Alumni body as a whole is very much matching the work we are doing. I think they also give some concept of what Alumni mean to the Institute in providing financial support.

"Further than that, in the guidance and counsel they offer the Institute through committees and in their performance in their professional work, Alumni provide a further support. They make M.I.T. truly an institution which is not devoted simply to teaching today's students, but is an institution of depth which has had a past and will extend into the future. We can take satisfaction in the fact that men of '34 are taking an increasing part in all this.

"In 25 years the Institute has changed much in its character. It can no longer maintain its proportionate representation in the engineering profession, numerically speaking. It is shifting toward a feeling that its function is to establish and maintain standards of excellence. Its widening field of technical studies has commenced to shape here in Cambridge a university of engineering and science which differs materially from the institution for the training of engineers which we knew.

"But I have written more than I intended! Let me close by saying that the way to recharge your M.I.T. storage battery is to come to Cambridge and see and hear for yourself. The time to do it—the one time that is important to all of us, which will come once and come no more—is June, 1959. It is my personal hope that all who can possibly be here will make it. That goes especially for those in distant lands and distant states. More later from the reunion committee. Sincerely, Hank Backenstoss."

Alumni Day at Cambridge was attended by Hank Backenstoss, Dick Bell, Irving Geltman, Rudolph Greep, Arthur Grout, Loren Hutchins, Norman Krim, Mrs. Katherine (Seidensticker) Lemon, Simon Malkin, Ernie Massa, Robert Miller, Henry Morris, Israel Nigrosh, Ben Salmon, Leonard Shapiro, Larry Stein, Mal Stevens, John Westfall, and Carl Wilson. The banquet and concert were much enjoyed.

Last May 1, Chuck Jerome was married to Constance Dupray of Ipswich. The Jeromes now live on Marblehead Neck.

We record the death of Robert Whittier in Watertown last July, leaving his wife and one son. A heart attack victim, Whittier had been with Raytheon for 15 years.

Last summer Graydon Abbott transferred from the Fore River Shipyard, where he had been hull designer, to the Long Beach Naval Shipyard. His Fore River associates honored his distinguished service at a farewell dinner in his honor.

Bob Guinness is now an Alumni term member of the M.I.T. Corporation. Bob is executive vice-president of Standard Oil (Indiana) in Chicago and has served as president of the M.I.T. Club of Chicago. Richard Bowditch '23 joins Johnny Newell on the board of overseers of Bates College.

Frank Milliken is now executive vice-president of Kennecott Copper and Neal Karr a vice-president of Singer Manufacturing Company.

You will have received the first notice of our 25th reunion to be held in Cambridge June 12 to 15 next. Save the dates and plan to come. As a permanent memento of this reunion a book will be written which will include a compilation of our histories since leaving Tech. This is a major undertaking, and we are fortunate in having a classmate as highly qualified as Charles Wright to take on this job. He is tackling this job with enthusiasm, and we are sure to have a top flight opus. It will be based on the information which you supply on the questionnaires which have been sent to you. If, as you read this, you have not yet returned this questionnaire, let this be a reminder to get busy. And if you have not received a reunion notice and a questionnaire, please drop a card to the 1934 Reunion Committee, Building 17, M.I.T., and one will be sent to you by return mail.

Next month's notes will be written by Mal Stevens.—WALTER MCKAY, *Secretary*, Room 33-217, M.I.T., Cambridge 39, Mass. JOHN A. HRONES, *Assistant Secretary*, Vice-president for Academic Affairs, Case Institute of Technology, University Circle, Cleveland 6, Ohio. MALCOLM S. STEVENS, *Assistant Secretary*, Room 1-139, M.I.T., Cambridge 39, Mass.

1936

After a four months' intermission, we are again beginning another year of notes. Your Scribe again is faced with the arduous but very pleasant duty of co-ordinating and in some cases creating news each month for the consumption of our classmates who seem to think it is better to receive than to give; but you must realize that we cannot give if we do not receive. So you tycoons, buffoons, and so forth, let us hear from you on your business promotions or assignments, vacations or travel, excursions into political life, your latest do-it-yourself project; or just bring us up to date on the mischief you have been up to. Scribble a few notes on any old piece of paper or send in clippings on yourself or other members of the Class.

The Alumni Day activities were attended by Ed Dashefsky, Vince Estabrook, Harry Foster, Bill Garth, Alice (Hunter) Kimball, Leo Kramer, Hal Miller, and George Parkhurst.

Received a letter from Tony Hittl reporting on a chance meeting with Dick Denton at the Pittsburgh airport. Dick is still with Vacuum Equipment, which sold out about two years ago to the New York Air Brake Company, of which they are now a division. Dick is the general manager of the new division. His older daughter has just graduated from high school and has been doing very well in mathematics and science. She is to attend Syracuse University to take a scientific course on a national merit scholarship. His younger daughter has just completed her sophomore year in high school, and is also excellent in math. His son has finished the eighth grade. Dick's business address is Vacuum Equipment Division, The New York Air Brake Company, 1325 Admiral Wilson Boulevard, Camden 11, N. J. Tony's address is Carbide and Carbon, 30 East 42d Street, New York, N. Y.

Here are some of the changes of address (and other things) received through the mails: E. Arthur Boyan (Professor removed), 6369 Madriver Road, Dayton, Ohio; Larry Tobey has left Marblehead for Wenham, Mass., 5 Juniper Street. Dana Devereux is with Emerson Engineers of 30 Rockefeller Plaza, New York 20, N. Y. John Graham is now located at 1655 Irvine Avenue, Costa Mesa, Calif. Tom Terry's new address is 21 Griffing Boulevard, Asheville, N. C. Elmer Davis is now at 314 Ocean Avenue, Marblehead Neck, Mass. Donald Spencer (Professor included) can be reached at 57 College Road West, Princeton, N. J.

Our Class was represented at the 66th annual meeting of the American Society for Engineering Education at the University of California at Berkeley by Ray Woodrow. Ray is vice-president of A.S.E.E. and executive officer and secretary, Project Research and Inventions, Princeton University. He presided at a general session on the theme, "Research and the Engineering College."

Howard Turner, Vice-president of Jones and Laughlin Steel Corp., is now on the advisory editorial board of *Research Management*. This is a new quarterly journal published by Interscience Publishers and the Industrial Research Institute, Inc. It is devoted to discussions and elucidations of problems in the field of research management.—JIM LEARY, *Secretary*, 1 Putnam Park, Greenwich, Conn.

1937

Our Class was well represented at Alumni Day last June with the following members and wives: Phil and Ruth Peters, Norm and Elvie Birch, Len and Annette Seder, Ralph and Bunney Webster, Wally and June Wojtczak, Jim Ewell, Joe Heal, Curt Powell, Bob Thorson, and Al Woll. A few of the comments that were made will give those who missed attending an idea of the occasion: "Nice reunion," Bunney Webster; "Sure glad we made it," June Wojtczak; "Why aren't there more of the Class of '37 at Alumni Day—at least those close by? A grand time was had by those who showed up," Ralph Webster; "Here's to next year—we should have the biggest turnout yet," Phil Peters; "Wonderful event, first one we have made," Norm and Elvie Birch (Norm also demonstrated his cartoon ability; but since pictures are not included, and also since they would have been censored, that is just one more thing missed by those who didn't attend). Phil Peters was chairman of the banquet committee, with Ralph Webster as his able assistant. They did a fine job, and it is good to see more and more members of our Class interested in the affairs of the Alumni Association. I also hope more of our Class, along with their wives, will note the above comments on Alumni Day and will mark next June as a must date to attend Alumni Day in 1959.

Jim Ewell is vice-president of manufacturing of Procter and Gamble. Jim, his wife Marjorie, with their four children live at 8700 Camargo Road, Cincinnati, Ohio, after various other locations including England. Bill Ingle lives in Evansville, Ind., and is doing engineering and retailing of Carrier Air Conditioning and Smith Hot Water Heaters. Gray Jensvold is with the Jensvold Investment Research, Morrisville, Vt., and

points out that "in the above business it is not what is but what people think is that counts (as with most things)." Gray, his wife Irene, with their five children live in Morrisville, Vt. Al Varrieur is with the Martin Co., Baltimore, Md. Al and his wife, Helen, have three children. Ross Black reports that he is "still living on Long Island and working for L. I. Lighting Co. Now in charge of Structural Design Section. Been studying in nuclear power field during past three years—took summer course in nuclear reactors and radiation at University of Michigan and two evening courses in atomic and nuclear physics at Adelphi College Graduate School here on Long Island." Ross, his wife Marie, and their two children live at 1 Terrace Drive, East Northport, N. Y. Tom Hallenbeck is still with the same machine tool company but has not been so active since his illness. However he does travel occasionally to technical meetings. Tom is active in the M.I.T. Club of Toledo, which has a monthly luncheon and active discussion; but no one else near our Class attends. If in Toledo, he hopes you will contact the Club. The Hallenbeck's—Tom, Margaret, and their three children live at 1720 Wildwood Road, Toledo, Ohio.

Dick Karch is superintendent of utilities at Cornell University. He presented a paper to the National District Heating Association in June on Cornell's Heating Problems. Dick is married, his wife's name is Billie, and his address is Cornell University, Ithaca, N. Y. Reland Westgate is plant manager for the Georgia Pacific Corp., manufacturers of pre-finished hardwood and decorative wall panels, at Savannah, Ga. He still holds his Naval Reserve commission of commander and belongs to the American Society of Mechanical Engineers and Kiwanis and occasionally travels to Latin and South America. The Westgates' (Reland, Sue, and their two children) address is Route #2, Box 391, Savannah, Ga. Walt Wojtczak reports that he is "still grinding away for Standard Builders. Main other activity has been the formation, with nine others, of a swim club which we use and enjoy a lot." Walt, his wife June, and their two children live at 73 Van Buren Avenue, West Hartford, Conn.

James McLean, President of Hoffman Laboratories, Los Angeles, Calif., was the main speaker at the industrial luncheon of the Armed Forces Communications and Electronics Association Convention in Washington. Martin Deutsch was elected a member of the National Academy of Sciences, the highest honor in American science, early in May. Dr. Joseph Morgan has been named chairman of the Physics Department at Texas Christian University. Joseph Wiggin presented a paper entitled "A New Image Orthicon Color Camera" at the air transportation conference of the American Institute of Electrical Engineers held in Buffalo, N. Y. Charles Cardani, United Shoe Machinery Corporation, in Beverly, Mass., presented a paper entitled "Evolution of a System for the Production of Electronics Equipment" at the Institute of Radio Engineers conference held in New York City. This past spring Louis C. Bartol was married to Miss Phyllis Norton in Saint Andrew's Church, Edgartown, Mass. The Bartols will live in Milton, Mass.—ROBERT H. THORSON, Secretary, 506 Riverside Avenue, Medford, Mass. S. CURTIS POWELL, Assistant Secretary, Room 5-323, M.I.T.,

Cambridge 39, Mass. JEROME E. SALNY, Assistant Secretary, Egbert Hill, Morristown, N. J.

1938

Many of you are well aware from personal experience that the Class had an enjoyable reunion at the Chatham Bars Inn last June. I think we are fortunate in the election of Al Wilson as class president for the period heading up to our 25th. He has an able group of regional vice-presidents to work with: Bob Johnson, Harold Strauss, Dick Muther, Bob Campbell, and Fred Kolb. As you can see from the by-line, you are going to be hearing from the same old secretary for the next five years. You will be receiving notices from a new class agent, however: Haskell Gordon.

As time goes on I suspect we shall be hearing of business deals that are an outgrowth of the reunion. I was able at least to extend one of my hobbies. Chet Lawrence and I are now occasionally exchanging stamps. Chet was up from the Dominican Republic with his wife and one daughter. T. Y. Shen, who was also at the reunion, was able to supply me with a current address for T. Y. Chang. Since then I have had an exchange of letters with the second T. Y. He is now in New York with his wife and their two children. He writes that since leaving school he has been building fertilizer plants for the Chinese government.

Bert Grosselfinger is still busily traveling about Europe. On a card postmarked in Copenhagen, he writes of being in Brussels and in Sweden. Later another card arrived from San Marino.

A news item of last June indicates that John Doremus was seriously hurt in the crash of a small plane he was piloting. The item indicated that he was expected to recover fully from his injuries. Another item announces that Horace Homer was granted a patent, but the note was so brief that it didn't disclose the subject of the patent.

Some promotions have been announced. Ed True of Concord, Mass., has been named professor of architecture in the Harvard Graduate School of Design. Bob Johnson has been elected vice-president and treasurer of the Boston Manufacturers Mutual and the Mutual Boiler and Machinery Insurance Companies.

Another item tells us that Mrs. Joseph Vallone has continued an interrupted education and now has a degree from the Rhode Island College of Education. Joseph is public works director for the state of Rhode Island. While we are still in the field of education: Clinton Tylee has joined the Bellows Free Academy in St. Albans, Vt., as a teacher of mathematics. Clinton is also a licensed real estate broker.

If you have managed to get through these disorganized notes and can hold out until next month, I'll try to have some more news that developed out of the reunion. If that doesn't satisfy, next time come yourself and get the news firsthand.—DAVID E. ACKER, Secretary, Arthur D. Little, Inc., 35 Acorn Park, Cambridge 40, Mass.

1939

The autumn notes start where we left off last spring—that is with Alumni Day. Among the '39 Classmates who attended

were: Bob and Dottie Casselman, John and Mrs. Francis, Fred and Mrs. Grant, Stan and Mrs. Johnson, John Krey, Eli Danenberg, Ruth Berman Pitt, Dick and Mrs. Leghorn, T. and Mrs. Merriman, Walt and Mrs. Pulsifer, Paul and Mrs. Sandorff, George and Mrs. Schroeder, Seymour and Mrs. Sheinkopf, Doc and Mrs. Wingard, John and Mrs. Wood, and Frances and Alfred Wypler.

Doc Wingard earned additional congratulations about this time when he received a master's degree from Harvard.

Dick Leghorn has done an outstanding job which we should all know about. Headlines in the *Boston Traveler* reported: "Nine months ago the Itek Corporation consisted of four men, one secretary, and one phone in a borrowed office. Today it has several hundred employees, and sales are running at the rate of \$6 million a year. It expects to double its size by the end of the year."

Dick is president and said his company is interested in information processing—a field which covers everything from a space satellite televising the earth to a research worker trying to find out everything the Russians have published on transistors. Congratulations, Dick, on such a tremendous achievement!

Congratulations, too, to Theron S. Curtis, Jr., who was recently promoted to trust officer of the Industrial National Bank at Providence, R. I.

Theodore Wroblewski of Sylvania Electric Products, Inc., read a paper to the Society of Aeronautical Weight Engineers in New York. His subject was "Weight Reduction Techniques in Transformer and Coil Design."

Francis W. Sargent, Commissioner of the State Department of Natural Resources, was commencement speaker for the University of Massachusetts Stockbridge School of Agriculture at Amherst. John Chartz represented Dalmo Victor Company at a Denver meeting of the West Coast Electronic Manufacturers Association.

Harold Hindman is one of the founders of the Instron Corporation, which makes instruments to measure the physical properties of materials. Harold sponsored a school which was attended by 150 research personnel from many of the nation's leading industrial firms. School was held at the Boston Statler, but the news clipping did not report on the overflow, if any, to the Jake Wirth annex.

This report is copied from the *Brockton (Mass.) Enterprise and Times*: "Edmund C. Yurgelun, 41, of 79 Norwood Avenue, Glen Rock, N. J., died Sunday evening (July 20) in a hospital in New York City. He was the son of Mr. and Mrs. Constantine P. Yurgelun of 45 Merton Street.

"Born in Boston, he spent most of his life in Brockton. After graduating from local schools he attended M.I.T. and graduated with honors. He was employed as an electrical engineer by the Western Electric Company, New York. He was married to the former Stephanie K. Statkus of Brockton, and they made their home in New Jersey for the past 12 years.

"Surviving are his wife, a son Roger Allen, 14; a daughter Linda Sue, eight; his parents; two brothers Frances C. of Milan, Italy, and Albert A. of Watertown, Conn.; and several nieces, nephews, aunts, and uncles."

During the summer I have seen a few brethren on my travels and can report: Phil Bush is still headquartering in San Francisco, where he is heading up atomic energy for the Kaiser Industries.

In Seattle I spent some pleasant hours with Jim Barton. Had a good fish dinner and bull session and then drove him to his lovely home overlooking Lake Washington where his ever-livin' wife Mary rustled up a small libation which we surrounded while listening to the wavelets working near the patio. The youngsters were all asleep, but we did peek in each room. The eldest is a daughter and she is taller than either Jim or Mary.

Jim brought me up to date on a few other classmates. He said John Alexander is with Boeing and is directing some super-classified work on guided missiles of the far future. Holden Withington is chief engineer of one of the Boeing groups and is responsible for the activities of several thousand engineers. Ted Snow is with Boeing and doing liaison work, headquartering at Wright Field. Ed Fish is in Seattle and is assistant to the president of a company which manufactures glass and bottles.

In Seattle I also saw Nils Rosenberg '40 and spent a wonderful afternoon at his home (also overlooking Lake Washington). Nils, Janet, and two beautiful daughters are back now from their junket to Norway, and Nils is busy selling tractors and farm equipment from a new location, north of Seattle.

Back in Los Angeles again, I ran into Jackson Nichols '40, who is working on metallurgical research problems at National Steel, next door to the shop where I headquarter.

And during the summer Hilda and I joined the Bob Fifes '40 on a week-end caravan. We traveled about 100 miles to the northeast, parked our station wagons and trailer in the woods near a stream and played ball, swam, drank beer, and told tall stories for a week end.

And this brings us to early September. In the next issues as the reports come in, I'll try to bring you special word from Doc Wingard and his committees as they plan our 20th reunion for June, 1959.—HAL SEYKOTA, Assistant Secretary, 416 Calle Mayor, Redondo Beach, Calif.

1940

I hope you all have had a pleasant summer. The first item of interest is that Larry Bernbaum has taken over the job of class agent for the Alumni Fund. Larry is president of Dynametrics, Inc., of Burlington, Mass.

At the Alumni Reunion on June 16, the following classmates had the opportunity of enjoying the wonderful meal catered by Seiler as well as the subsequent marvelous pops concert: Edgar W. Adams, Jr., and wife; John R. Gray; Philip A. Stoddard; James L. Baird and wife; Robert A. Bittenbender and wife; M. Arnold Wight, Jr., and wife; Walter H. Farrell and wife; William E. Wood, wife and son; Richard G. Robertson and wife; Samuel A. Goldblith and wife; Andrew C. Bayle; Lawrence W. Kelbley; and Edward Chin-Park.

It is with regret that I must report the death of John Souser in July, 1957.

Ralph Sharpless is now senior engineer in the Technical Division at Humble Oil and

Refining Company, Baytown, Texas. Ralph has handled various large projects connected with catalytic cracking and deasphalting. Bernard Carver is the subject of a success story which recently appeared in the *Boston Globe*. He is the co-founder of an investment firm, B. C. Morton and Co., which started out 10 years ago with one office and a total capital of \$500. Bernie's company now has 42 offices scattered throughout the U. S., Hawaii, and western Europe. Last year Bernie's company did over \$40,000,000 worth of business.

Dick Orth, Vice-president of Sanders Associates, Inc., was among a group of New England businessmen who had a recent conference for briefing on current mobilization planning. Don Ross has been promoted to the position of secretary of Phoenix of Hartford Insurance Company. Don previously was assistant secretary and has been with Phoenix of Hartford since 1950. Prior to that he was with the Hartford Accident and Indemnity Company.

George Kosco, who is a captain in the U. S. Navy, is now stationed at Norfolk, Va. Alaettin Aksoy, who is manager of Crucible Steel Company of America's Applied Research Laboratory, was one of the group of scientists who went over to Russia this summer. Dr. Aksoy took part in a conference on vacuum applications in metallurgy sponsored by the U.S.S.R. Institute of Metallurgy of the Academy of Science. At the conference, he delivered a talk on the "Quality Aspects and Properties of Vacuum Induction Melted and Vacuum Arc Remelted Steels and Super Alloys." He also visited several countries in western Europe to observe recent developments in vacuum melting techniques.

Joe Havens has been appointed professor in the Psychology Department of Carleton College, Northfield, Minn. From your Secretary's own experience at Carleton, he is sure Joe will enjoy his tenure there.

In the Alumni Fund drive last year our Class made its best record yet in higher than average gifts, there being 25 as compared to 19 in the 1957 drive and 11 in the 1956 drive. In the new drive which will be underway when these notes reach you, we should be able to top even last year's record.—ALVIN GUTTAG, Secretary, Cushman, Darby, and Cushman, American Security Building, Washington 5, D. C. SAMUEL A. GOLDBLITH, Assistant Secretary, Department of Food Technology, M.I.T., Cambridge 39, Mass. MARSHALL D. MCCUEN, Assistant Secretary, 4414 Broadway, Indianapolis 5, Ind.

1941

Some very welcome letters have arrived during the summer, and it's a pleasure to pass on some quotes from each. From Joe Bowman: "We are expecting a fourth child in September, which has us a little apprehensive at our age. We are looking forward to the next reunion, and will see you in '61 if not before." Advance publicity for the 20th reunion so soon! However, keep it in mind. From Frank Storm: "The oil business has been very slow, but appears to be in the process of picking up. Best wishes and say hello to all of our mutual friends for me." From Amelio D'Arcangelo: "Starting September 1, I will be at the Virginia Polytechnic Institute in Blacksburg, Va. V.P.I.

is offering a new curriculum in naval architecture and marine engineering as an option within the Department of Mechanical Engineering. As professor of naval architecture, I will have the task of organizing the new courses and getting them into operation." From Bob Montana: "Spent January, February, and part of March in Cuba, went from there to Mexico, and finally home on May 15. Guess you know what that means when you have just moved into a house with much to be done." I sure do! Bob is with W. R. Grace and Company in New York. Janet Murdock wrote that John had been away on business most of the summer. Stevie and Irv Foote moved on July 11 to 71 Manning Drive, Berea, Ohio. Irv has been transferred to headquarters of the Glidden Company in Cleveland, and now holds the post of assistant chief engineer.

All of you should have received a copy of the class directory in June; if you didn't, please let me know. Also let me (or the Alumni Association) know of any address changes, so that future issues may be kept up to date. The directory is one of the relatively few expenses incurred by the Class; the dues are the only source of income. Ergo, if you haven't sent in your two dollars already, now is a good time. Checks, cash, stamps will all be gratefully received by the Secretary at the address below.

One humorous side light on dues and directories: one member of the Class (who will, of course, not be identified) felt that since two dollars seemed to cover two lines for most people, his three lines were worth three dollars. Here's hoping everyone gets longer and longer titles.

Ralph De Lano has been named a senior engineer in the Cryogenics Department at the International Business Machines Research Center in Poughkeepsie, N. Y. He had previously been a development engineer on cathode ray storage tube projects. Neil Burgess has been appointed manager of the commercial engine operation of General Electric's Jet Engine Department in Evendale (Cincinnati), Ohio. Bill Cherry was awarded his Ph.D. in physics from Princeton last June.

An invention of Howard McMahon's, now science director of Arthur D. Little in Cambridge, is described as a "blood bomb," a steel cylinder originally designed for super-cooling of biological materials to permit long-term storage. It has recently been used in the study of the effects of hydrostatic pressure on biological materials and certain biochemical processes. Norm Karasick is now president of Swift Business Machine Corporation of Great Barrington, Mass. Instron Engineering Corporation of Canton, Mass., founded in 1946 by Harold Hindman '39 and George Burr, recently conducted a week-long session at the Statler in Boston on testing techniques and information, including operation and maintenance of the Instron universal testing instrument, an electronic device used to measure the physical properties of materials.

Lloyd Perper has been appointed a consultant to the technical directorate of the Airways Modernization Board. Serving on Dr. Stever's committee on Air Force research and development were nine members of the Air Force Scientific Advisory Board, one of whom was Ted Walkowicz, of Laurance S. Rockefeller Associates. The committee has recommended expansion and

reorganization of research and development activity sponsored by the Air Force.

In the list of authors and speakers are George M. Brown, who, with J. M. Smith '43, wrote an article on "Thermodynamics" for *Industrial and Engineering Chemistry*; Bob Sinsheimer, who wrote an article for *Engineering and Science* on the search for the smallest known virus that can give a clue to the hereditary pattern of the gene; Lloyd Wilson, engineering section head for measurements in Sperry's electrical measurements laboratory, who coauthored and delivered a paper entitled "Radio Frequency Interference Measurement and Control Procedures at Sperry Gyroscope Company" at a conference on such measurements sponsored by the Joint Evaluation Group for the Joint Chiefs of Staff; and Dr. R. Christian Anderson of the Atomic Energy Commission laboratory research staff, who spoke on "Careers in Atomic Energy" as a part of a series of talks on atomic energy given in Waterbury, Conn., for teachers in the area.

Present at Alumni Day were: Bud Ackerson, Bill Ahrendt, Johan Andersen, Davis Dewey, Mike Driscoll, Sam McCauley, Ed Marden, Howie Morrison, Jack Renner, Ted Walkowicz, and Reid Weedon.

On a personal note, the Collinses moved on June 19 to the address below. We've spent a busy summer getting settled and working on the lawn, further complicated by my working six days a week on the guidance system for the Polaris missile. We have a new rancher, as they're called around here, plenty large enough for guests; any '41 classmates in the area are more than welcome—drop in!—IVOR W. COLLINS, *Secretary*, 9 Sunnyside Drive, Dalton, Mass. HENRY AVERY, *Assistant Secretary*, Pittsburgh Coke and Chemical Company, Grant Building, Pittsburgh 19, Pa.

1942

Ken and Jean Rosett write that they managed to combine a two-week tour of duty with the Air Force Reserve in the Pentagon, a week with Ken's firm's New York office, and some vacation and sundry travels, all as part of a five-week trip from Chicago to the East Coast. Their letter goes on to say: "My active duty tour this summer included a three-day visit to the Air Force Missile Test Center at Cape Canaveral. Like all interesting Air Force staff field visits, you pay the price of the visit by spending the following week milling out sundry staff studies, memoranda, and reports. In any case the activity at Cape Canaveral is nothing short of fabulous. All goes well with us here in the Great Middle West and we sincerely hope things are serene on the New England front."

Ed Edmunds writes from Albuquerque: "A few lines from way out here in the desert country—where one very seldom comes across anybody from '42 this far from the Charles River. We do have quite an active Tech bunch, however—almost all with the various government projects here about. They are all either much older or much younger than the '42 crowd, which probably has some logical explanation that has escaped me to date. The worthwhile news here concerns our regional conference, 'Engineering Our Future...The Role of the Southwest,' which the M.I.T. Club of New Mexico is sponsoring on November 8. The

all-day conference will be held at the Albuquerque National Bank Building and will feature Dr. Killian, Dr. Stratton, Dean Harrison, staff members of the Institute, and industry and education leaders from the Southwest. Those of you who may see these notes before the November 8 date are urged to attend. Otherwise, news is scarce and I have been very busy building up my chemical jobbing business." I am sure the Class joins me in sending best wishes to Ed for great success in this program.

The local newspapers have reported in some detail that Kenneth M. Leghorn has been appointed president of the Bradley Container Corporation, a subsidiary of the American Can Company. For the past five years Ken has been president of the Sun Tube Corporation, another subsidiary of American Can. The five Leghorns—Ken, his wife Betsy, Carlen, Susan, and Christine—will be leaving Berkeley Heights, N. J., for a new home in the vicinity of Maynard, Mass. Ken's brother Dick moved to Boston last winter as president of Itek Corporation. This latest move brings both Leghorns back to Boston together for the first time since Dick graduated from Tech in the Class of 1939.

The United Aircraft Corporation of Hartford, Conn., has announced that Wilfred H. Shaw has been appointed assistant west coast representative for their Hamilton Standard aeronautical equipment. He will reside in the Los Angeles area. Heinie has been chief inspector for Hamilton Standard for the past four years. Joseph E. Cushing of Dorchester, Mass., has recently been appointed a teacher in the school system of Chelmsford, Mass. Willis G. Lawrence is the author of "Factors Involved in Plasticity of Kaolin-Water Systems," which appeared in the April issue of the American Ceramic Society journal. Dr. Lawrence was a Clay research fellow from 1940 to 1942 and received his Sc.D. with us. After four years with the American Brake Shoe Co. he became a research professor at the New York State College of Ceramics at Alfred University. His fields of interest include molding for ferrous castings, fundamental studies of clays and cements, and radioactive tracer applications in ceramic research.

The University of Pennsylvania has announced that Dr. Norman Brown, Associate Professor of metallurgical engineering, has received a Guggenheim fellowship to study the theory of imperfections in solids. His studies started at the Max Planck Institute in Stuttgart, Germany, and are continuing at the Cavendish Laboratory at Cambridge University in England. Professor Glenn C. Williams of Tech was one of three authors of "Application of Well-Stirred Reactor Theory to the Prediction of Combustor Performance," which appeared in *Combustion and Flame* for March, 1958. In the paper it is shown that some gross performance characteristics of combustion chambers can be simulated by conceptual models composed of interacting elements. The National Science Foundation recently made an \$11,000 grant to Professor William H. Dennen of the Department of Geology at the Institute. Bill's investigation will be on the geochemistry of sedimentary rocks.

Wedding bells were sounded last June for Edward W. Smith of Darien, Conn., and the former Patricia Ruth Woodward of Rock-

port, Mass. Edward is with the Port-Oliver Co. of Stamford, Conn. His wife has degrees from the University of New Hampshire and Tufts College. She has taught at the model nursery school at Mount Holyoke College and is now a teacher at the New Canaan County School in Connecticut. Our very best wishes to the newlyweds.

Newman M. Marsilius, Jr., Connecticut State Senator and President of the Producto Machine Company, has been elected to the board of trustees of the University of Bridgeport, Conn. Robert W. Van Tuyle is on the advisory editorial board of a new quarterly journal, *Research Management*. Alumni Day last June brought the following back to the Institute: Dr. and Mrs. Jacob Kline, Mr. and Mrs. George Toumanoff; Harvey Kram and his son Leonard, who is planning to go into investment banking, not engineering; Lou Arnold; Arthur Margolin; Ed Pepper; Reece Wengenroth; Carl Zeitz; and your Secretary.

Over the summer we have received word of many changes of position and a great many changes of address. Professor Forbes S. Robertson is now with Faculdade de Filosofia, Curso de Geologia do Petroleo, Av. Joana Angelica 18, Salvador Bahia, Brazil. Donald R. Casey has returned from Saudi Arabia to San Francisco. Ray A. Elmendorf, Jr., '45 has left New York for the Esso Refinery at Koln-Merkenick, Germany.

Captain Thomas F. Connolly is now commanding the U.S.S. *Hornet* out of San Francisco. Albert A. Conviser has joined the Alkon Photo Products Co. of Hawthorne, N.J. Fred J. Fleischauer is with the National Supply Co. in Allison Park, Pa. James Robert Kirby is in St. Louis with the Missile Engineering Division of McDonnell Aircraft Co. Dr. Harrison M. Lavender, Jr., is now with the California Research Corporation in Richmond, Calif. Captain Richard Lawrence Mohan has left Bremerton, Wash., to join the U.S. Naval Engineering Experimental Station at Annapolis. Lieutenant Colonel Elwyn A. Moseley has traveled across the country to San Francisco to join the first Weather Wing Headquarters. James C. Turnbull has moved to Worthington, Ohio, and is with the International Research and Development Corporation.

From the Alumni Register records we learn that Nanubhai B. Amin is at Race Course Circle, Baroda, India; Ernest F. Artz has moved to Wilton, Conn.; Dr. Barremore B. Brown has moved to Lancaster, Pa.; Vincent T. Elkind is now in Bristol, N.H.; Arthur S. Gow, Jr., has moved to Elizabeth, N.J.; William Hahn is in Ellicott City, Md.; Kenneth G. MacIlroy is in West Hartford, Conn.; John T. O'Connor is in Bethel Park, Pa.; Warren H. Powers has moved to Ponte Vedra Beach, Fla.; William B. Seaton is in Hollis, N.Y.

That completes the summer's news. We look forward to hearing from each and every one of you about professional accomplishments, community activities, and other news of interest. Post card notes would be fine, and we welcome dictating machine records if they will fit a Gray Audograph. Very best wishes from your *Secretaries*, ED EDMUNDS in Albuquerque, N.M.; J. J. QUINN in Hawthorne, Calif.; BOB KEATING in Marion, Ill.; and LOU ROSENBLUM from Photon, Inc., Cambridge 41, Mass.

The 15th reunion has come and gone; and although some aspects of the affair had best be forgotten, here follows a brief summary. Almost all of the 56 couples and 14 stags checked in on Friday, July 13, at the Royal Megansett Hotel at North Falmouth. The hotel was built during the preceding week or two, so accommodations were not quite complete. Because of this, Chairman Ralph Leader and committeemen Bob Anderson and Mort Spears camped out nearby.

We had a driving rain that evening, which inevitably resulted in a wet night both indoors and out. Saturday broke clear and sunny, however; and the sporting activities such as sun bathing, golf, and sailing got into full swing. The expert sailors in the group managed to capsize all four dinghies, much to the remorse of the undergraduate supervisor whom the M.I.T. sailing pavilion had sent down. The outdoor clambake at noontime was quite enjoyable, and we had a lot of fun getting the class pictures organized later that afternoon. Burt Picot not only took the pictures but graciously sent copies to all who attended the reunion as a gift to the Class.

The cocktail party was a smashing success and was followed by a fine banquet with a world-famous speaker on the topic of atomic energy. Introduced as a famous Italian scientist with an appropriate name, retired Boston policeman Walter Flaherty had everyone fooled until he broke loose with his real Irish brogue. Prizes were awarded on Sunday to almost everyone present; and then the gang dispersed tired but happy, as the saying goes.

Class officers were elected as follows: President, James F. Hoey, Jr.; Vice-president, T. Kemp Maples; Secretary-Treasurer, Richard M. Feingold; Assistant Secretary for the Midwest, John W. McDonough, Jr.; Assistant Secretary for the West Coast, Christian J. Matthew; Class Agent, Gustavo Calleja. The purpose of the assistant secretaries is to maintain a more intimate communication with the members of the Class in different parts of the country. I sincerely urge you to keep in touch with all of your secretaries so that our class unity may be maintained.

I might add that our reunion had more than one half dozen attending from the West Coast; Bob Lichten came in from Texas; Bob Rorschach brought his wife and two of his children from Tulsa, Okla.; Fred Kanab came out of the woods from Canada; and Gus and Hilda Calleja brought their six-week-old son with them from Cuba.

Mort Goodfriend left bachelorhood on August 31, 1958, when he was married to Evelyn Baker of New York City. They planned a honeymoon to the Caribbean, and then back to New York. Walter Boehner has been appointed as a member of the staff of the Airways Modernization Board in charge of operations analysis.

John Hess, section head for fundamental studies and research of the aeronautical equipment division of Sperry Gyroscope Company, was granted a patent for control systems for dirigible craft. Andrew Johnson, who received his doctorate with our Class, was the author of a paper which appeared in the May issue of the *American Ceramics Society Journal* on "Elimination of Dimpling in Certain Colored Glazes."

Doctor Thomas Clune, who received his master's degree in public health with our Class, passed away in May of this year in Rhode Island, where, as a public health dentist, he was the leader of the fluoridation program in his state. William J. Cochran lost his life in an airplane accident in June, 1958. Bill was an observer for the National Advisory Committee of Aeronautics on a flight from Westover Air Base in Massachusetts to London, England. Three planes engaged in the venture; the one Bill was on exploded and crashed shortly after taking off. Bill was a career man at Grumman Aircraft, where he was an experimental test pilot.—RICHARD M. FEINGOLD, *Secretary*, 49 Pearl Street, Hartford 3, Conn. JOHN W. McDONOUGH, JR., *Assistant Secretary for the Midwest*, R.R. #1, Donwood Drive, Naperville, Ill. CHRISTIAN J. MATTHEW, *Assistant Secretary for the West Coast*, Arthur D. Little, Inc., 314 Battery Street, San Francisco 11, Calif.

2-'44

Reunion time again! 1959 brings us up to the 15th and plans are going along to assemble at the finest resort on the Cape—the Chatham Bars Inn at Chatham, Mass. The joint committee of 2-'44 and 10-'44 appointed to do this job includes Bob Breck, Mal Kispert, Scott Carpenter, Walt Gray, John Hull, John Granlund, Paul Heilman, Ken Scheid, and Burt Bromfield.

We have arranged to have all activities on the grounds of the hotel. The Inn is situated on the waterfront facing Nantucket Sound, and for those of a seafaring nature we have made arrangements with Jack Wood at the sailing pavillion to borrow several of the new fiberglass Tech dinghies with an instructor for those who need a bit of repolishing. Surrounding the hotel is the golf course with a fine bar at the 19th hole. Chet Woodworth recommends the tennis court, so have the racket restrung and in readiness. In short, all we need in the way of activities can be had on the premises.

By the way, the ocean water there is generally 15 to 20 degrees warmer due to the proximity of the Gulf Stream; so bring the water skis along. The second week end in June is the time; so put a mark on the calendar now and make plans to spend it with your friends from M.I.T.

John Rockett received a doctorate this June from Harvard. Bob Cummings, who has been teaching at Belchertown for the past two years, has just taken a new position with the East Longmeadow, Mass., school system. Bob teaches seventh and eighth grade math and science. A step up for Jim Mavor has been announced by Northeastern University. Jim is now associate professor of mechanical engineering and has been on the faculty since 1953.—BURTON A. BROMFIELD, *Secretary*, 72 Woodchester Drive, Weston 93, Mass.

10-'44

A reunion committee under the chairmanship of Burt Bromfield, 2-'44, has begun making arrangements for the 1959, 15th reunion of the Classes of 2-'44 and 10-'44. This joint reunion will be held at the Chatham Bars Inn, Chatham, on Cape Cod. You will be hearing more about this event promptly, and perhaps even before reading

this Review article. In any case, mark your calendar now for reunion dates of June 12 to 14, 1959!

Jim Mulholland recently wrote to John Hull, our Class President, and advised that the pressure of his growing publishing business required that he resign as class secretary. And so, as John puts it, I have now "ascended to the throne." John gave this month's column a good send-off, too, with a paragraph of news as follows: "Our Hull-Standard Corp., now in a new plant in Hatboro, Pa. (20 miles north of Philadelphia), continues to expand with its plastics molding press manufacturing. In connection with the business I travel a bit. Have often visited with Butch Buccini in his Naperville, Ill., home, and recently had a long interesting chat with King Cayce in Cleveland. Both of them seem to be doing very well businesswise, and seem to be enjoying life at the same time. Ed Peakes, in Kirkwood, Mo., continues to rise in the General Electric Company. He happened to be in New York City last fall in the same hotel when Albert Anastasia got his in the barber shop. (Ed didn't say how much he got paid for the job.) Ed wrote that he had seen R. L. Hunter, who combines running his construction business with taking a series of courses of higher education. I've seen Jim Angell a number of times in recent years—I believe it's Dr. Angell. He's guiding some of the transistor development programs in (I think) Philco."

Another letter, received last spring, was from Thor Stromsted, who reports enthusiastically: "For the past year and a half I have been in charge of research and development at the T. L. Smith Company in Milwaukee, manufacturer of mixing machinery and industrial laundry equipment. Most of my recent efforts have been in developing new applications for the new turbine type mixer which we have under license from a Swedish firm. This machine is fabulous and mixes anything with anything else faster by far, more thoroughly, and with greater economy than any competitive equipment currently on the market. I also have a side-line business of my own, Tekay Products Company, producing and marketing a new basic play and exercise toy called the Kangaroo Kid, which I developed myself. Business is jumping as a result of a plug on page 86 of the March 10 issue of *Time* magazine. We are also getting terrific publicity from many other sources including Alcoa's television program and their newsletter."

There will be more news next month. Our thanks again to Jim Mulholland for carrying the class secretary assignment for so long.—And don't forget to make a note now of the reunion date.—KENNETH G. SCHEID, *Secretary*, 24 Lee Street, Marblehead, Mass.

1945

As I sit down to write these notes the crispness of fall is in the air, I have just pulled up the last of the beans, and only a few tomatoes remain to ripen on the vine. These notes should be in Cambridge tomorrow morning, but I trust the day's delay will still meet the editor's deadline. Actually, I am surprised to find the time to write, for the arrival of the third little Springer—Jonathan Sherman on August 25—has upset the normal routine—to say the least!

Speaking of new additions, we are pleased to report that Lynn Elizabeth Butler arrived safely in early July. Our west coast spies report that Lynn and Bobbie are doing very well; it was only on Labor Day that proud Vince recovered sufficiently to return to work, so I am told.

A small '45 Phi Gam reunion was held in Hershey, Pa., the week end of May 31. Jerry Patterson wrote the following on June 6: "Last week end there was a little '45 reunion at Hershey, Pa. The idea was cooked up by Pete Hickey and Tom Stephenson a month or so ago. A good idea it was, too! We had a wonderful week end. Pete and Lou brought Lisa along and Lib and I brought Tony and Mark. Tom brought his very lovely wife Jimmie and his elder stepson David. She is a wonderful girl and David is a fine boy, a year older than Tony. As a matter of fact, Steve and Jimmie celebrated their first anniversary there on Sunday. Friday night after bedding the kids down we all gathered in Pete and Lou's room and really gave the old nostalgic a good squeeze. Even sang some of the old songs. I guess the only reason they didn't throw us out was that our voices are getting weak from age.

"Saturday was the kids' day, and what a town Hershey is for them! In the morning we visited the zoo. Nothing like the monkey house to cure a hangover. After repairing to the hotel for a couple of drinks before lunch to restore courage, we spent the afternoon at the amusement park. I hadn't been in one since I was a kid. Lou and I even went on the roller coaster, but Pete and Steve chickened out. Poor Lib, the only thing I would let her do was go through the fun house as #4 Patterson is on the way, due in October. The boys even conned me into taking them swimming at the local public pool after that. To top it all off Ringling Brothers circus was there, so we took that in Saturday night. The boys were really bug-eyed what with their first amusement park and first nontelevision circus all in one day.

"Sunday morning we toured the gorgeous rose gardens next to the hotel; and after a brief Martini party to celebrate the Stephensons' anniversary, we all went our separate ways. We were also celebrating a promotion of Steve's. He is to be assistant engineer at an Alcoa plant just up the river from Pittsburgh."

Still on Phi Gams, Dave Trageser reports that Slim Pasfield has left Du Pont in Wilmington to teach either chemistry or chemical engineering at Trinity College in Hartford, Conn. Undoubtedly we will receive official notice of this change soon, for Trinity sent out quite a blurb when Ted Blakeslee became an associate professor of engineering last April. Your Secretary had lost tract of Ted while he was in a similar capacity at Lafayette in Easton, Pa. The past two years Ted was a development and installation engineer in the electronic department of Hamilton Standard at Bradley Field just north of Hartford. Ted spent a couple of years as a naval architect with George G. Sharp in New York before going to Lafayette in 1947.

General Aniline and Film Corporation reports two classmates on the payroll. Jack Atwood is at General Dyestuffs' main office in New York after several years in sales work in Charlotte, N.C.; on the other

hand, Ernest Larson is up in Binghamton, N.Y., at the Ansco Division. Jim Hardigg recently opened his own business in South Hadley Falls, Mass. Hardigg Industries specializes in the manufacture of boxes in which fragile instruments and equipment can be shipped with little or no chance of damage; the prospects of its garnering an even larger share of the nation's multi-billion dollar container industry seem bright. The patented process upon which the business has been built is a special way of making corrugated containers with polyurethane shock insulators suspending an inner box in which the fragile item to be shipped is placed.

Jim McDonald, Institute of Atmospheric Physics, University of Arizona, gave several papers at the 166th national meeting of the American Meteorological Society at Utah State University in mid-June. At the 55th meeting of the Acoustical Society of America in Washington in early May, Cyril M. Harris gave a joint paper describing a 54-channel audio spectrum analyser. There have not been too many address changes lately but we did notice that Chuck Buik and family have moved to Charlotte, Vt., while Al Werner has forsaken greater Boston for greater Newark, now living in West Orange, N.J. Wallie Ross, retired general secretary of the old T.C.A., recently sent me a copy of *Tech Talk*, a bi-weekly publication covering the extra-curricular activities of personnel at the Institute.

In less than two years—June, 1960—we shall be attending our 15th reunion; yes, time certainly flies. Dave Trageser and I have discussed this item together at length as well as with others; but before reaching any decision as to what, where, and why, we feel we should have your advice. All of us who attended the 10th at the Curtis in Lenox in 1955 had a wonderful time in spite of the poor weather, and several have thought possibly we should return. On the other hand, many are of the opinion that the many wives not too familiar with our New England environment might enjoy the Cape, which immediately brings Snow Inn at Harwichport into mind. It won't be too many months before your reunion committee starts planning this safari, so please let us have your thoughts along with your whereabouts and whatabouts if you want this column to be a regular occurrence.

The following classmates and wives attended the Alumni Day festivities in Cambridge last June:

David P. and Mrs. Flood; Jay W. and Mrs. Forrester; James L. and Mrs. Harold P. Gurney; Charles H., 3d, and Mrs. Hart; Robert N. Maglathlin; Thomas J. McNamara; Warren H. Miller; Gerald V. and Mrs. Quinnan; William H. Shuman. You read of the program last July.

Your class officers are justly proud of 1945's increased participation in the 1958 Alumni Fund. 34 per cent of us made an average contribution of \$15.30 for a total of \$2,462. For many years we made an apparent poor showing until the Institute eliminated the deadwood from our listings. The 474 members now comprising the Class of 1945 are either graduates or non-graduates who at sometime or other have contributed to the Alumni Fund. Our participation must increase and should increase; we know you will continue to do your part—not only for '45 but for the regional solicitation

program as well. Dave Trageser has been chairman of the local drive in Wayland the past two years, Don Strang was chairman in his community in 1957, and I am heading the drive here in Stamford this year. Many of you, I know, will be solicitors in your local community. Until this year 1945 has been one of the youngest classes in the special gift category; and our hats should be off to Max Ruehrmund, for he has done a real bang-up job as our special gifts chairman.

Don't forget your reunion thoughts and personal news; see you next month I hope.—CLINTON H. SPRINGER, *Secretary*, Firemen's Mutual Insurance Company, 420 Lexington Avenue, New York 17, N. Y.

1946

Although this won't be read until turkey time it is being written during the last evening of what has been a very wet summer vacation. Despite the relatively wet summer, it has been a pleasant one with lots of tennis and swimming. We hope everyone had as much fun as we. One of the most enjoyable evenings we spent this summer was when Norm Sas, in Boston on business, dropped in for the evening. Jan and I hadn't seen him for many years, and we spent a very pleasant evening reminiscing. Norm is president and owner of Tudor Metal Products Corporation of Brooklyn, N.Y., a concern which manufactures metal toys. He and Irene are expecting to double the size of their own private toy testing panel, and as a result they are looking for larger quarters than their present apartment at 750 Kappock Street, Riverdale, N.Y. Norm is chairman of the next annual outing committee of the Toy Manufacturers of the U.S.A.; so if anyone in our vast reading audience happens to own a hotel with adjoining 18-hole golf course, Norm will be very happy to hear from him. Please be sure to remit the usual 5 per cent to me at the address below.

As promised in the July issue we have late and interesting news of many classmates. It will take most of the publishing year to report it all, but we'll get started right now. Richard Gliedman wrote, back in April: "I thought I'd let you know that the Gliedman twins are finally separating. I just became engaged to a wonderful girl, which made all the waiting worthwhile. The wedding takes place in London on July 28. Monroe is going over with me to be best man and look over the English girls. Monroe and I have been practicing orthodontics in New Rochelle for the past few years, combining private practice with teaching at Columbia. We belong to the M.I.T. Club of Westchester but very rarely run into any classmates at the meetings. Do you ever hear from Lorenzo Lea or Monty Ward?" The answer to the latter is "No," and if anyone ever does see L.B. or Monty, please ask them to write. With Dick's letter was a clipping of the wedding announcement. His wife is the former Carole Y. Freeman of Scarsdale, N.Y. Carole attended Cornell University, London University, and Columbia University.

After being first a salesman and then chief belting engineer, Robert E. Spoerl is now manager of Conveyor Products Sales Department of U. S. Rubber Co. He has written three articles on conveyor design, two for *Engineering and Mining Journal*, and one for *Mining*. Bob and Marilyn have two

children, Bob, age 4 and Sally, age 3; and they live at 8 Hilltop Road, Short Hills, N.J. Bob writes: "In April I spent a very pleasant evening with Glen and Phyllis Dorfinger at their home in Houston. They are thriving in Texas—were expecting #4 child imminently. (It has since arrived—a boy.) I also bumped into John Wandrisco on a plane between Pittsburgh and Detroit. John is manager of Market Research for Latrobe Steel. He likes his job and seems to be in good shape. In Dallas I discovered a virtual nest of M.I.T. Alumni. Saw Jack Freiburger '45, Otto Wetzel '48, Max Daggett, Norm Meullen '47 and Bill Scott '44 also live in Dallas. These fellows are '45 or '47, but their whereabouts may be of interest to many of our guys. Ray (Bagger) Brown and his wife Betty have just announced the arrival of their fourth sibling. They finally got a boy. Just shows you the value of perseverance."

John K. Pollard, Jr., writes again from Cornell University, where he is a research associate in the Department of Botany. John is one of the most interesting correspondents we have in the Class. The Pollards "have been thwarted four times in a quest for a child whom we could name Madeline, but the fifth attempt was a complete and apparently worthwhile success." John is the treasurer of the local nursery school, "and thereby an ardent although imperfect student of accounting procedures as they relate to keeping the teachers paid." He has 15 research publications in print or in press but says he shall not inflict another textbook on either the too willing publishers or the less willing students. He does spare time abstracting for Chemical Abstracts Service. Constant readers of this column may recall my comment that any helpful gardening hints from John would be appreciated. The following arrived too late to help this year, but is printed herein as one of our little services for all '46 men:

"I noted your reference to a garden, and since you apparently have located an unimproved piece of ground in the Bay area I offer the following advice on weeds. In the past couple of years a thin black polyethylene film has come on the market for mulching the ground with no effort. Since it is black, no light goes through it and all plants under it, presumably weeds if you can tell them from the vegetables, will soon die. This is great since you can spade up a square foot of garden and plant the melons, then spread this deadly film all around the plants. The melons can grow over it without harm, the weeds cannot grow up into the melon or squash vines; and the only cultivation necessary is in the original square foot of plot about the roots of the vines. Now presumably you are married and may even have children who can be trusted to pull up the dozen or so weeds that sneak into the original plot; so, armed with this advice, you probably can arrange to maintain a supervisory capacity until the melons are ripe and your more direct participation is needed in the cycle of growth and senescence. It is a great feeling to lie in bed and know that the film of polyethylene and the melons are working for you out in the back yard." Thanks for the advice, John. We'll try it out next year.

Seymour Collins is a product engineer with the Bucyrus-Erie Drill Division in Richmond, Ind., where the company is just completing a new plant for the manufacture of

portable well drilling equipment. The Collinses have moved into a new home at 2732 South D Street, Richmond, Ind. Shepard M. Arkin, after receiving his S.M. from M.I.T. in 1947, worked on guided missile programs for the Navy Department until 1956, at which time he joined Raytheon as a staff engineer. He is now program manager for Sparrow at Raytheon's Missile System Division in Waltham, Mass. Shepard was married in 1951, has two children, and lives at 25 Whipple Road, Lexington 73, Mass. Alfred and Marian Little and their three children live at 210 Farnham Road, Havertown, Pa. Through evening work Al earned his S.M. in mechanical engineering from the University of Pennsylvania in 1951 and his M.B.A. in industrial management from Temple University in 1957. He is presently an evening instructor in management at Temple, and he expects his article "Sick Leave as a Management Problem" to be published in the *Economic and Business Bulletin* of Temple University in the near future. Al left his position as supervisor, Experimental Structures Branch, Naval Air Experimental Station, in 1956 and joined General Electric, where he is now project engineer, Nose Cone Engineering, Missile and Ordnance Systems Department, Philadelphia. His work involves integrating the efforts of the various engineering groups in Nose Cone Engineering whose mission is design of re-entry vehicles. The principal jobs at the moment are nose cones for the Thor Intermediate Range Ballistic Missile, and Atlas Intercontinental Ballistic Missile. That should do it for this month. See you again in December.—JOHN A. MAYNARD, Secretary, 15 Cabot Street, Winchester, Mass.

1948

Well, now that vacations, the class reunion, and Alumni Day are all things of the past, we must buckle down and brace ourselves for the long winter before us! We certainly hope that this past summer has left you all with many fond memories. I'll try to bring you all up to date on the events of the past few months in this issue. There's much to report, so here goes...

Bob Mott did a tremendous job of covering the class reunion for us, and I'm sure you will want to hear all about it. His report reads: "The Class of 1948 held its 10th year reunion at the Curtis Hotel in Lenox, Mass., on the week end of June 13 to 15. In spite of a chill wind that blew in late Friday night and kept going until Sunday, a pleasant time was had by all. Saturday morning and a large part of the afternoon were taken up with athletic contests, pretty much confined to golf, tennis, and softball, with a sizable number taking part. A delicious barbeque was served and properly consumed Saturday noon, the only disappointment being that it was necessary to hold it inside, the sun not having quite enough strength to overwhelm the wind. About the middle of the afternoon, the hotel put on a fashion show around the swimming pool. This exhibition of the very latest in ladies' swimming and casual wear was much appreciated by both the men and their wives. This was followed by a demonstration of skin-diving equipment in the pool. The movie 'The Social Beaver' was shown late in the afternoon in the music room of the hotel.

"A meeting of the men of '48 was convened at 6:00 P.M. under the direction of President Dave Cist. The following slate of officers was elected to serve for the next period: President, Bob Bliss; Vice-president, Bill Katz; Secretary, Dick Harris; Assistant Secretaries, Harry Jones, Herb Kindler, Bob Mott; and Treasurer, Joe Yance.

"After the meeting, the whole group (men, wives, bachelors, and guests) enjoyed a cocktail hour before adjourning to the 10th year class banquet. Bob Mott toastmastered the affair, which included a few Tech songs with Bill Katz doing the honors at the piano; Bill Katz's very amusing awards of prizes for such things as 'Came the Farthest Distance to the Reunion' or 'Has the Most Children'; and the awards made by Herb Kurinsky for athletic prowess demonstrated earlier in the day. The main feature was an informal, off-the-cuff talk by Professor Bill Greene concerning the changes, physical and otherwise, that have taken place at M.I.T. since '48. Professor Greene was in his usual good form, and we all very much enjoyed his remarks. We were honored and pleased to have Mrs. Greene with us also for the reunion week end. The banquet closed fittingly with everyone joining in on the 'Sons of M.I.T.' The rest of the evening was spent in dancing and in congenial conversation.

"Sunday was anticlimactic as one might expect, but we're sure everyone departed with the feeling that it will be nice to repeat the performance again in five years."

After reading this, I'm sure those of us who weren't able to attend have many regrets; but then, five years isn't such a long way off, fellows! By the way, alumni attendance numbered 83 at this reunion—too numerous to list herein.

The following class members made it for Alumni Day: William B. Akers; S. Martin Billett; Robert H. Bliss; Albert E. Bowen, Jr.; George E. Brown; Albert F. Carr; Benjamin G. Dann, Jr.; Charles N. Deane; Robert L. Devine, Jr.; William M. Dolan; Daniel J. Fink; C. R. Gates; Bernard M. Gordon; Robert R. Guild; Robert L. Hall; Philip B. Herman; Edwin W. Hiam; James J. Hourihan, Jr.; Jay M. Jennis; Frank A. Jones, Jr.; William J. Joyce; Lawrence I. Levy; Charles A. Licht; Richard D. Linnell; Robert G. Loewy; Joseph A. Luceri; Charles H. McDonnell, Jr.; Denman K. McNear; William B. Maley; H. F. Marx; Hugh B. Morrison; Clifton L. Moss, 3d; Harold Ottobri; Robert K. Peterson; Frederick A. Radville; Raymond F. Rogers; Robert D. Shooshan; Roger L. Sisson; Verity C. Smith; Richard A. Snow; Richard W. Souza; C. Vincent Vappi; Arthur S. Waxman; and G. R. Worrell.

Some of our more energetic classmates have been rewarded with additional degrees this past June. Among them are: Robert A. Giniyan, Jr., who received his Doctor of Laws from Suffolk Law School. Bob also holds two S.B. degrees from M.I.T.—one in Chemical Engineering and the other in Business and Engineering Administration. Melvyn Savage received his Doctor of Dental Medicine degree from Tufts University School of Dental Medicine. He also holds degrees from Northeastern and Worcester Polytechnic Institute. Harry J. Beattie, Jr., was awarded a Master of Metallurgical Engineering degree from Rensselaer Polytechnic Institute. He also has an S.B. degree from M.I.T. Charles P.

Rozier received an M.S. degree in Management from Rensselaer Polytechnic Institute, which supplements his S.B. degree from M.I.T. Congratulations to you all!

Honor has been bestowed on another of our classmates. Dr. Martin J. Klein, Associate Professor of Physics at Case Institute of Technology, has been awarded a Guggenheim Fellowship for study abroad. Marty will work for one year at the University of Leiden in Holland. He will study the life and work of the late Paul Ehrenfest, Leiden professor who made outstanding contributions to modern theoretical physics. Marty has been on the Case faculty since 1949. In 1952 and 1953, he was a National Research Council fellow in physics, studying in Dublin. To him go our best wishes and heartiest congratulations. We're indeed proud to number him among us!

In the line of new appointments, we have the following to report. C. William Shipman, Research Associate at M.I.T., has been appointed an assistant professor of chemical engineering and chemistry at Worcester Polytechnic Institute, effective for the fall term. Armand V. Feigenbaum has been named manager of a newly created Manufacturing Operations and Quality Control Service for General Electric Company, with headquarters in New York City. Armand was formerly manager of Quality Control Services for G.E. in Schenectady, N. Y. The Reverend George T. Swallow, formerly curate at Calvary Church in Williamsville, N. Y., has recently become assistant at St. Mary's Church in Daytona Beach, Fla. Good luck to all of you in your new positions.

Now for news in general. One of our colleagues, Dr. Francis J. Scheid, who is chairman of the Mathematics Department and associate professor of mathematics at the Boston University College of Liberal Arts, made the newspaper headlines recently by initiating an introductory college calculus course for credit on television this past summer. Who knows, this may be the beginning of a rather unique way of obtaining a college education, and it will certainly be a boon to television sales!

Another classmate making page 1 news is Leonard P. Salter. Len directs an unusual laboratory where samples of soil, air, water, vegetation, human and animal bone, and tissue are tested for dangerous radiation. Scientists have not yet determined at what level atomic radiation becomes a menace to life and health, and the results achieved by Len and his colleagues will aid in making that decision. With men like Len in this field, we can all enjoy a good sense of security!

Also concerned with the protection of humanity is Reverend Clifford C. Ham, Jr. Cliff, now a Methodist minister with a degree in city planning, is on a crusade to rid his parish in Baltimore, Md., of overcrowded houses. The cases involve landlords with buildings in his parish who are housing more families in their buildings than the density law allows. Cliff describes his work as "essential in providing minimum health and safety standards" for the neighborhood. We wish you success in your endeavors, Reverend.

There are other classmates who are active in the comparatively new field of city planning. Morton B. Braun is planning consultant of the Lynn, Mass., Redevelopment

Authority; and, from indications received through a recent newspaper article, Mort and his associates are making tremendous strides in this field. Also, Donald M. Graham, Planning Administrator of Boston, Mass., chose "City Planning" as his topic of discussion when he recently spoke before the Newport, R. I., branch of the American Association of University Women.

We hear that Robin D. Willits is quite active in Toastmasters International, and he was quite instrumental in having Boston, Mass., selected as the site for their conference this past June. The aim of Toastmasters International, which is a nonprofit organization, is to improve a member's speaking ability. Anyone interested in joining???

Among the Tech men participating in the summer general meeting and air transportation conference of the American Institute of Electrical Engineers in June, were the following: John W. Harrison, who joined with James T. Duane, Jr., '53 in a paper entitled, "The Turbonator—Design and Development;" and Edward F. Magnusson, who, with R. T. Smith, John R. M. Alger '49, and James T. Duane, Jr., '53, prepared and delivered a paper on "Computer Analysis of A-C Aircraft Generators."

Sonny Monosson, who is now president of the Berkeley Finance Corporation in Boston, Mass., has volunteered to head the class special gifts solicitation. He has secured the assistance of the following subchairmen: J. Karl Justin, New York City Metropolitan area; Bill J. Grant, northern New Jersey area, and Chuck A. Licht, Chicago area. Any other classmates who would like to take their metropolitan area would be welcomed, and should contact Sonny at his office at 40 Court Street, Boston.

On the status of the Class profile, the biographical section is already typed, proofed, and corrected. The statistical section was completed the end of August, and the book was to be in the hands of the printer by September 15. Norm Kreisman offered to do the printing and binding, and it now appears that the books will be in the mail by November. Jerry will have a limited number of books bound (in addition to those 235 advance subscriptions), and would like to receive checks for \$4.75 from anyone wishing to get a copy. Checks should be sent to Jerome D. Krinsky, 445 Havenwood, Highland Park, Ill., and may be made payable to M.I.T. Class of '48 Profile Book.

Well, folks, this is it. I guess I've taken in just about all the summer months' activities. I'm certainly glad our class doesn't consist of a group of traveling salesmen—these notes could have been endless!—**RICHARD H. HARRIS, Secretary**, 26 South Street, Grafton, Mass. **HARRY G. JONES, Assistant Secretary**, 94 Oregon Avenue, Bronxville 8, N. Y. **HERBERT KINDLER, Assistant Secretary**, 128 Elatan Drive, Pittsburgh 16, Pa. **ROBERT R. MOTT, Assistant Secretary**, Box 113, Hebron, Maine.

1949

Our lead story to begin this year's notes has to be the naming of Wilbert Chope as one of America's Ten Outstanding Young Men of 1957. The award was announced last January and is sponsored by the U. S. Junior Chamber of Commerce. Wilbert, president of Industrial Nucleonics, led and inspired

the development of isotope and X-ray thickness gauges. A study by the Atomic Energy Commission on peacetime uses of atomic energy estimates that industrial nucleonic control systems such as Accuray save the American economy \$105 million per year. Wilbert is a frequent speaker throughout the nation on the economic impact of automation; engineering education; World Neighbors, Inc.; and the industrial use of atomic energy.

John Alger is the author of an article, "Using Digital Computers," which appeared in the December, 1957, issue of *Machine Design*. Robert E. Bailey '41 presented a paper at the national meeting of the American Meteorological Society held in Kansas City, Mo., last March. The paper, abstracted by Joe Galway, Tech '49, was on "Composite Charts for Tornado Situations Under Northwest Flow Aloft."

Via The Technology Review, Jack Barriger writes that he is living and working in Winslow, Ariz. Jack and Evelyn Dobson were married in Alfred, N. Y., December 29, 1955. Shortly thereafter they moved to Arizona, where Jack is a trainmaster in charge of 300 miles of the Santa Fe's main line between Albuquerque and Winslow. Jack reports that they do quite a bit of skiing and because of living on the transcontinental main line (rail, plane, and car) have quite a few visitors and would welcome more.

Two '49 men were among those participating in the 1958 Nuclear Congress held in Chicago in March. John Eichenberg, Westinghouse Electric Corp., with I. Cohen and E. F. Lasco, presented a paper on "Metalurgical Design and Properties of Silver-Indium-Cadmium Alloys for PWR Control Rods." Shepard Bartnoff with J. Weisman and G. G. Tirellis presented a paper on "Coolant Temperature Rise in a Pressurized Water Reactor During a Loss-of-Flow Incident."

Dr. Fred Buttner presented a paper on "The Chemical Needs of the Electronics Industry" at the Meeting-in-Miniature of the New York Section of the American Chemical Society in New York last March. Dr. Buttner is group manager, New Product Engineering, with the Electrometallurgical Co., a division of Union Carbide. Phil Cassara recently joined Link Aviation, Inc., in Binghamton, N. Y., as an aerodynamicist.

Chuck and Shirley Holzwarth, now living in Toledo, sent word of the birth of a baby daughter, Roberta Lynn, last March 19. Gene Skolnikoff writes he is now working at the newly created Institute for Defense Analyses jointly organized by five universities including M.I.T. The Institute is a private organization to study policy questions and advise the Joint Chiefs of Staff and Secretary of Defense. Gene married Winifred Weinstein last September.

More news of '49 activity in technical conferences and seminars: Benjamin Lax, Lincoln Laboratory, M.I.T., participated in a round table discussion on "Future Trends of Electron Tubes and Solid State Devices" at a symposium on electronic waveguides held in New York in April. Ted Moreno was among those who gave papers at the recent WESCON meeting. He spoke on "Methods of Increasing Bandwidth of High Power Microwave Amplifiers." Joe Masters (with M. S. Cohen) is the author of "Aerodynamic Heating Simulator for Transducer Develop-

ment," appearing in the *Review of Scientific Instruments*, December 1957.

As outlined in Tom Toohy's annual letter to all of you, plans for our 10th reunion in June '59 are well underway. Reunion cochairmen Russ Cox and Kemon Taschioglou are already negotiating fine accommodations. Arrangements are being planned to please our wives as well as ourselves, as they are definitely being invited to join with us. A program based on a serious theme is under consideration to include seminars or talks on such subjects as placement and job opportunities—ten years after graduation; how engineers have started and successfully own their own business; and possibly an interesting technical presentation by a member of the M.I.T. Faculty. It's not too early to start making your own personal reunion plans for next June. Meanwhile, best wishes for an enjoyable Thanksgiving. —O. SUMMERS, HAGERMAN, JR., *Secretary*, 8519 Pringle Drive, Cincinnati 31, Ohio.

1950

With the beginning of a new volume of Class of 1950 news I have hopes of receiving news from the majority of the 1,501 members who make up our Class. In order to facilitate the collection of news, Bob Mann and myself have set up eight geographical regions with a total of 18 regional secretaries. This summer you all received a letter from Bob explaining this new system and a list of the secretaries of your region. We enclosed a 2¢ postal card for use in jotting down your class news. I am pleased to say that a great many of you did make use of the postal card before Uncle Sam raised the ante on August 1. Now, if a few more will chip in another cent each for a stamp on the front and a bit of news on the back of the card, we can look forward to a full year of news coverage. For this first issue of *The Review* I'll list each region and each regional secretary; so upon reading, jot down the name and address of any of the secretaries and drop a line telling about your life history.

New England region: Mr. William Frank Maroni, 61 Gardner Avenue, North Providence, R. I.; Mr. Walter Leslie Allison, 23 Grant Avenue, Old Greenwich, Conn.; Mr. C. J. Jacoby, 3d, 44 Four Brooks Road, Stamford, Conn. *Mid-Atlantic region:* Mr. Joseph S. Gottlieb, 60 Knolls Crescent, Riverdale 63, N. Y.; Mr. Donald R. Miller, 21 Gaines Street, Huntington, N. Y.; Mr. Edward S. Cohen, 625 North Broad Street, Elizabeth, N. J.; Mr. Robert A. Snedeker, 30 Woodland Drive, Red Bank, N. J.; Mr. Eli Goodman, 123 Norrington Drive, Pittsburgh, Pa.; Mr. Paul Zorn, 4400 Concord Drive, Trevose, Pa. *South Atlantic region:* Mr. James A. Hooper, Hooper Motors, Inc., 625 Florida Avenue, Cocoa, Fla.; Mr. John MacMillan, 4623 Golf Park Drive, Lynchburg, Va. *North Central region:* Mr. Norman B. Champ, Jr., 400 Parkwood Road, Kirkwood 22, Mo.; Mr. Robert Victor Garvin, 426 Clinton Springs Avenue, Cincinnati 17, Ohio. *South Central region:* Mr. Joseph Dorion Fleming, Jr., 1510A Louisiana Avenue, New Orleans 15, La. *Mountain region:* Dr. John T. Reeves, M. D., 1259 Cherry, Denver 20, Colo. *Pacific region:* Mr. Helmut E. Weber, 61 Sleepy Hollow Lane, Orinda, Calif. *Foreign region:* Mr. Richard L. Davies, North

American Cyanamid, Ltd., Niagara Falls, Ontario, Canada; Mr. Mariano Romaguera, Ingenio Providencia, Palmira, Colombia, South America.

Now for the fruits of all this work. News about you—the Class of 1950. First from the North Central region: Harold C. Harris: after 1950 (a vintage year) two years at University of Minnesota for a bachelor of science in mechanical engineering, two more for Uncle Sam's sailors in Korea, and since January 1955, a sales engineer with the H. R. Harris Company (no coincidence—Hal works for his father), manufacturer's representatives for electrical and mechanical construction equipment. Raymond G. Hawes is the proud papa of two sons ((3.0 and 0.5 years old). Jack Hetherington is a partner in his father's architectural firm; Jack was married in 1952 and rejoices in Robin (a girl four years old), and John (sex unspecified), two years old. Jack looks forward to the 10th reunion and is considering a roundup of the IV-A and B bohemians. Carl Moos is the patriarchal head of a family of three, ages five, three, three; he took a doctorate in biophysics from Columbia University in 1957. If my biophysics is correct, this implies twins or a miracle. Carl has been a research associate at Northwestern and the University of Chicago Medical School, is now instructor in physiology at Illinois Medical School, doing research on the biochemistry of muscle functions. Twins!

Gordon G. Robeck is a research engineer at the Taft Laboratory here at the United States Public Health Service. Gordon has worked on water treatment, including a stint at the Oak Ridge National Laboratory of the Atomic Energy Commission on the treatment and disposal of radioactive waste. Two little fall-outs of his own—John and Paul. John R. Terrall is a physicist in General Electric Aircraft Nuclear Propulsion Department. John finds frequent uses for the teachings of Professor Weisskopf, and must at the least be honest enough to have obtained a Q clearance. His seven-year-old son prompts him to the realization that we need better schools (and more Professors Weisskopf).

J. B. Wilbur, Jr., has been with the contracting firm of G. W. Timmons for the past six years. Wilbur keeps busy and plans to go down Maine for his vacation. He was visited recently by Donald Starner and his family, who were on their way to Iowa and California. California is now full of Iowans with lovely families. R. V. Garvin says the post office is mad because his zone number is 17, not 29, as in Bob Mann's letter at large. With the United States Government at his back, he demands public retraction. He has worked for the General Electric Company since March of 1950 in a number of engineering and manufacturing assignments, primarily on aircraft gas turbines. The proud father of one fat little boy, he is doing his best for the educational standards of the profession by flunking a solid fraction of his mathematics classes at the University of Cincinnati.

Bill Harris is still at the old stand—Electronic Department, Missile Engineering Division of McDonnell with job title of senior electronic engineer. He is presently in charge of design and development of the flight control system of a new missile. During his two-year vacation (November, 1953,

through November, 1955) in the Army. Bill worked up through the ranks to attain status of private first class. Walter Kunze, Jr., is assistant manager of the Structural Railways Bureau of Portland Cement Association in Chicago. This was a new job last February; the five previous years he was a structural engineer with the Portland Cement Association. His family includes two daughters, ages one and four; and Mom, Dad, and the children make their home in Arlington Heights, a suburb of Chicago. Bob Tweit's timetable since school runs so: 1952, married to Joan; 1953, Ph.D. at University of California, also entered Army; 1954, son William born in November; 1955, discharged from Army and employed at G. D. Searle and Company as research chemist; 1956, daughter Susan born in September. The family is now living in Wilmette, Ill. Mr. and Mrs. Joseph W. Twombly and the five young ones—Ann, Joan, Jim, Mary, and Jane—recently moved into their new home in Florissant, Mo. Milt Rand and family are living in St. Louis; he wishes to report that after three boys, June and he have a baby girl. Her name is Alice and she was born on July 5, 1958. Vital statistics in the life of David Uline: married to Simmons graduate Clara Younglove on September 1, 1951. Children consist of Charles Herbert, born February 28, 1953; Molly, born May 7, 1955; and John MacKenzie, born on September 29, 1957. Dave is employed by the J. L. Hudson Company (Detroit's largest department store). He joined the firm in 1950 and worked up through various assignments to his present position as manager of the Statistical and Accounting Department.

Now a trip to the Pacific region via a report from Hal Weber. Cosimo L. (Rudy) Cataldi is currently employed as supervisor of Industrial Engineering at the Los Angeles Division of North American Aviation. W. Lawrence Gates: since the class of 1950 at M.I.T., and after his Sc.D. there in meteorology in 1955, he has worked for the Air Force Cambridge Research Center in Boston as a research meteorologist until September, 1957. He is now assistant professor in the Meteorology Department at University of California in Los Angeles, and spends his time teaching dynamic meteorology and numerical weather prediction, as well as doing research under Air Force contract along the same lines. Ken Eldred was married May 31, 1957, to Barbara Fischer and is now in California as acoustical consultant with Western Electro Acoustics Laboratory in Los Angeles. Lloyd M. Licher's career as an aeronautical engineer (mostly design work) came to an end in 1957 when he took an opportunity to work at his hobby. The Soaring Society of America, Inc., hired him as its first executive secretary since the late 1930's. The job entails handling the routine business of the Society, co-ordinating committee work, and editing the Society's bi-monthly journal, *Soaring* magazine. It's more than enough to keep a sole employee busy (with secretarial help). He works out of his home and enjoys the job very much. His wife, the former Rose Marie Pratt (M.I.T. '52, XVI) had to take a leave of absence from her part-time aerodynamicist for Douglas to have their second child, another boy, on May 11, Mother's Day. His name: Bruce E. Charles R. Faulders, his wife and 20-month boy, are

living in Fullerton, Calif. He works in the Missile Division of North American Aviation as a research specialist; much of his current work is in the area of space flight technology.

Henry Cordes Sharp, Jr., writes: "Since this is my first report following graduation, I shall have to stick to the subject to get the important events all listed. I first worked for Carrier Corporation for two years, then in 1952 I started a five-year stint with the St. Louis Carrier Distributor. Almost a year and a half ago we moved to California, where I am working with Carrier's #1 central station distributor, Air Conditioning Company, Inc., as a sales engineer. 'We' consists of my wife, Harriet Woods (Wellesley 1950) Sharp (wedding November 14, 1953); Kathy, born July 14, 1955; and Henry 3d, born December 27, 1956. We just bought our house at 1703 Oak Street, South Pasadena, and will move in July 12. Would like to hear from visitors in Los Angeles. We're in the blue Los Angeles phone book." Dave Gushee is now West Coast representative for the American Chemical Society Applied Publications, operating out of San Francisco. Ed Perkins has been transferred by Stanford Research Institute from Menlo Park to South Pasadena to head up a technico-economics section there. Fred Kurzweil, Jr., is working towards his Ph.D. in electrical engineering at Stanford, teaching part time on the faculty. While working for his master's degree at Stanford he met Virginia Lee Vipperman. On June 21 of this year they were married at Montalvo Estates (near Saratoga). They are now living in Palo Alto. Gerard Hirschfield and family have just moved into a house (their first) in Van Nuys, Calif. After living in various apartments for eight years, they consider their house pure luxury. They have one child, Mark, two and one-half years old, and they consider him "the greatest." Gerry works at System Development Corporation in Santa Monica. George Dickson is married and has two boys, ages four and one-half and one. He has received his Registered Professional Electrical Engineers License and is now working for Bouillon, Griffith, and Christofferson, professional engineers, in Seattle, Wash.

Bill Maroni has compiled the following about New Englanders: Jim Gay is now working for Jackson and Moreland, Inc., Boston, primarily on power station design; he has been there for the last five years since leaving the Army. He married Jean Dennett in 1951 and they have two children, Barbara and James Jr. Jim also tells of meeting Jim Geiser earlier this summer while visiting the Leeds and Northrup plant in Philadelphia. He is with West Pennsylvania Power and is working near Pittsburgh. Among the lucky visitors to the Brussels Worlds Fair were Leopold Rossbach and his wife Janice of Westwood, Mass. He is a senior electronics engineer at Allied Research Associates, Inc., Boston. Prior to this past year, he spent six and one-half years with inertial guidance systems at the M.I.T. Instrumentation Laboratory. He presented a paper at the 1958 National Telemetering Conference in Baltimore on "Telemetering and Data-Processing Systems in an Expendable Wired-Sensing Instrument." Enders A. Robinson has been appointed assistant professor in the Department of Mathematics at the University of Wisconsin, in Madison,

effective this September. George Wetmore tells us he is enjoying the Institute pool while working at the Foxboro Company, Foxboro, Mass. He, too, has married and has four sons. Among the new arrivals this year was a second son, Adam Samuel, on May 29, to Dick L. Bersin and his wife. They have another boy, Joshua Morris, two years old. Dick has been at Tracerlab, Inc., Waltham, Mass., for the past eight years.

Hal Curtis, Course II, sends us a "thumb-nail sketch" which tells of his marriage on May 30, 1954, to Estella Bartlett Crawford. Their son, Harold W. Curtis, Jr., was born January 26, 1957. Hal is chief engineer of Brookfield Engineering Laboratories, Inc., in Stoughton, Mass. Bob Very extends a nice invitation to all his old friends and classmates to the "57" restaurant in Boston—"a wonderful place to dine"—where he is pianist. He also teaches piano, trumpet, and trombone. Bob graduated from Eastman School of Music, University of Rochester, 1950, and is now living in Westwood, Mass. Arnold Doyle tells us: "After less than one year with Du Pont in East Chicago, Ind., I went on active duty with the Army Chemical Corps. I drew 18 months' pleasant overseas duty in Japan. Following my separation, I came with Arthur D. Little, Inc., in Cambridge." He and his wife Fran were expecting their third child in August. We hope all turned out well. They have a boy and a girl, so they wouldn't be too hard to please this time. Chet Claff is now working in emulsion polymerization at B. B. Chemical Company. Prior to this work he had been a research chemist with them. Their products are used in the leather and shoe trade mostly. Chet also tells us about J. J. Earshen, the "Smiling Munrovan." He heard from J. J. as he passed through the suite of G. D. Spencer in Boston earlier this summer. The Claffs have two children—Kathy, three and one-half, and Roger, two.

Among the class authors add the name of R. A. Horne, who has completed an index to the complete works of Plato and is now working on a second book, *History of the Atomic Theory from Antiquity to 1945*. He reports it is far easier to write a scholarly book than to find a publisher. Since graduation, he has been going to school mostly: M.S. in chemistry, University of Vermont, 1952; M.A. in philosophy, Boston University, 1953; and Ph.D. in Chemistry, Columbia University, 1955. He was appointed a post-doctoral research associate at the Department of Chemistry, Brookhaven National Laboratory for Nuclear Science. Presently he is working in the semiconductor division of the Radio Corporation of America. As for Bill Maroni, himself, his schedule continues to be a rather heavy one: "As you know, my dad and I operate a heavy construction company in Providence. At present I divide my time between a site preparation contract at the Bomarc Missile Facility, Otis Air Force Base, Falmouth, Mass., and two smaller jobs in Rhode Island. Traveling to and from these jobs daily plus the actual work leaves time for little else. For this reason, my wife, Gloria, and I missed our first Alumni Day last June. However, we are looking forward to that 10th reunion and we hope lots of others are too. We had a pleasant visit this summer from Ed Dmytryk and his wife, Escelle. Ed is with United Engineers in New Jersey. They have two children, Diane and Gary."

I still have a batch of news from other regions which we will include in the next issue. However, don't get discouraged. Fill the mail boxes with news for the January issue. A few birth announcements as an ending. Bill and Jean Enders of Lexington had their second child, their first daughter, Kimberly Jean, on May 21, 1958. Bill is with Airborne Systems Laboratory at Radio Corporation of America in Waltham, Mass. Don and Patricia Hendrickson had their first offspring, Andrew Rolfe, on June 8. They are living in New Rochelle, N. Y. Don is working for Socony Mobil Oil Company in the Manufacturing Department. Ruth and I have an announcement to make, too. Our fifth child was born on September 11, 1958; Germaine Marie breaks the tie of two boys and two girls in the Weaver household. Mother, baby, and all the little ones are doing wonderfully well. If memory serves me correctly (without closely checking my records), we join five other couples who have five children (the Lee Powers, the Joe Twomblys, the Jim Lydons, the Frank Parisis, and the Ralph Gretters).

Space is at a premium in the November issue, so I'll sit down now and start writing for the December issue.—JOHN T. WEAVER, *General Secretary*, 24 Notre Dame Road, Bedford, Mass.

1952

Here it is the beginning of another year, the seventh since we left Tech; and is anyone else feeling old? Left over from last year's news we would like to report that the cocktail party at the Faculty Club on June 13 was a great success with about eight classmates and wives present including Nick Melissas, now with Raytheon, Andover; Jim and Joan Stockard—Jim is still working on the doctorate at Tech; Bob and Nancy Lurie—Bob's at Dewey and Almy; Wes Haywood, who is working at Raytheon and living next door to John Fitch '53, better known to the Boston crew as WHDH's John McClellan and now writing a jazz column in the *Boston Herald*. Dick and Joyce Silverman were there—Dick has his own consulting business in Weston; and Stan and Jackie Buchin; Dan and Louise Sullivan; Paul Watson and wife (Paul is with Baird Associates in Cambridge); John Ward and wife; Bob Robertson '53 and wife; and many others. In fact, such a fine time and turnout that several of us thought we might try again this year around Christmas or later to get together. Summer weddings that have come to our attention include that of Dr. Edwin Child and Miss Barbara Manning in Manchester, N.H. Ed graduated from Yale University School of Medicine and is now a physician in the U.S. Public Health Service. Peter E. Price and Miss Suzanne Curley were married in Milton, Mass. Peter is now with Allegheny Ludlum Steel Corporation. Also chief participants in weddings were Harris D. Lang and Ann Pickering in Lexington; Sanford Isaacs and Nancy Bixler in Jaffrey, N.H.; Douglas R. Briggs and Barbara Ann Brown in Ilion, N.Y.

Gus and Chloe Rath announce the birth of Gustave 3d. Gus is still with International Business Machines, Poughkeepsie, as a psychologist with groups of Vassar girls as guinea pigs, which sounds like nice work. Bob Briber is now in Washington, D.C., as an assistant to Dr. Killian. Report has it

that Bill Dingee has set up his own scientific and medical supply company in Watertown, Mass. And Sandy Kaplan's Westboro contracting operation has houses selling like hot cakes. Captain Harold Larson is in Europe with the Army as a dentist. Dirk Plummer writes that he is now a mechanical engineer with Aerojet General Nucleonics in Berkeley, Calif. Dick Quigley is working for Radio Corporation of America in Burlington, Mass., and living in Wayland. John and Mary Brady are living in Waltham, where John is working for Sanborn Co. on Route #128. Edward J. Duggan is now at Instrumentation Laboratory, M.I.T. John B. Shannon of Hingham, partner in Child, Lawrence, and Shannon, deserves a bow for the award of the Boston Arts Festival Architecture Award to the firm for their Scusset Beach development, Cape Cod.

Princeton University announces the appointment of Dr. Edward J. McCluskey as assistant professor in the Department of Electrical Engineering. Donald Jaffe, metallurgical engineer at Bettis Atomic Power plant in Pittsburgh, Pa., has been selected to participate in the Carnegie Institute of Technology doctoral program, sponsored by Westinghouse.

Harvard Business School awarded degrees to three '52 men in June: Donald A. Christensen, Conrad F. Frey, and Robert M. Green. William F. Hoey, 3d, received his master's in city planning from Harvard. John B. Schutt received his master of science in chemical engineering from the University of Rochester. John J. Godfrey received his Ph.D. in chemistry from Brooklyn Polytechnic Institute. Marcel Wellner received his Ph.D. in physics from Princeton.

Joe Moore wrote in that he and John Bonner '50 have set up their own consulting firm: "Bonner and Moore Engineering Associates" in Houston, Texas. Things are evidently going well in chemical and computer consultation, for a new man has entered the firm, none other than Lou Karvelas. Joe and wife Glenna have four children, one girl and three boys.

Jim Margolis has joined Kellogg Associates, Salem, Mass., marketing consultants, as their New York representative. He will be operating out of an office in Mamaroneck, N.Y.

Managed to see Jim and Maurice Davidson for a drink last time I was in New York, and found Jim is at Curtiss Wright and they are still living in Teaneck, N.J.

Well, that about hits the end of backlog for this month. We could use some news here, especially from the Midwest and far west; so won't you drop a line telling us what you are doing and what anyone else in the Class you happen to be in touch with is doing???—DANA M. FERGUSON, *Secretary*, 366 Main Street, Lynnfield Centre, Mass. JAMES MARGOLIS, *Assistant Secretary*, 218 Richbell Road, Mamaroneck, N.Y.

1953

Our fifth reunion on June 14 and 15 at Wentworth-by-the-Sea (Portsmouth, N.H.) was wonderful. The site was accessible yet in the woods and well suited for a genuine blast. Our weather experts did a perfect job—sunny and warm, yet cool enough to keep condensation off the drinks!

Upon arriving at the hotel everyone took time out to greet old friends, introduce wives, mix up names, and so forth. On walking into the hotel it is doubtful that any of us missed the class Ivy Leaguer with his golf cap, pipe, sunglasses, striped shirt (with a button in the back) and bermuda shorts. Yep, it was Jake Pinkovitz, who is now working with Gillette Safety Razor in Boston as an industrial engineer and doing graduate work at Northeastern University. Three of his last five years were spent as a lieutenant j.g. with the Navy.

Most of the crowd arrived about two o'clock on Saturday and took part in the beer ball game. Frank Turcotte hustled to organize it, with additional support from Dick Lindstrom, the reunion committee treasurer. Frank and his wife, Rosemarie, have one child and are living in Norwood. This year he'll finish up his master's degree at Tech, after spending the summer doing consulting work in structural engineering. On the other hand, brother Richard is in the product development field with Arthur D. Little, Inc. (Dick is in bad shape; his week end date, Carolyn Powers, is rapidly nudging him toward the church door.) Bob and Alice Buniks were the class clowns at the ball game (Alice tried to stretch out a single by sliding to first—she didn't make it, but it was hilariously funny), while Mandy and Ann Manderson did the long ball hitting. Bob's line of work is civil engineering with Thompson Engineering Company in Worcester. (One child, Bob?) Mandy and Ann are still enjoying their "country home" in Acton with their three rambunctious kids. As many others, Mandy is working for Arthur D. Little (A.D.L.), as an industrial economist. (Of course he was our reunion chairman and did a wonderful job; I'm sure all of us appreciate his efforts.) There were about 30 others playing ball and another 20 keeping eye on the beer. Of course I made the mistake of asking Pete Noonan to look after my date. (Watch that guy; he's dangerous!) I didn't realize Pete had been to the Harvard Business School; presently he is an industrial engineer with Pratt and Whitney Aircraft in Hartford.

The registration desk was kept pretty busy all afternoon, with most of the committee sharing the work. Bob and Tickie Anslow were particularly helpful in this regard and handled most of the details. Bob is chairman of next year's reunion (Class of 1954) and was a "working" guest. Many thanks to both Bob and Tickie. George and Ruth Hegeman gave a hand at the desk, not to speak of the many hours of work spent in handling the reunion mailings. They have one child, and George is also working for A.D.L., as an industrial economist. Bob and Mary Fahey drove all the way from Boston to see that the class prizes arrived on schedule but couldn't stay as Bob wasn't too well at the time. And he, too, is employed by A.D.L. I believe their child (what kind, Bob?) has arrived by now. Three confirmed bachelors were seen hanging around the desk: Rog Johnson, Ed Stolfer, and Stan Silverman. Rog is back at Tech after finishing up a tour of duty with his Uncle. Ed, though unemployed right now(?), just received his S. M. from Tech. Stan went to work for Merck, Sharp, and Dohme Research Laboratories in Rahway, N.J., as a chemical engineer after finishing his S.M. at Tech.

Took a small break and went down to Philadelphia to spend a week end with Fred and Sandi Brecher. (They had some terrific movies of reunion festivities. Maybe they will show them at the 10th.) Ole E. Fred is a structural engineer with David Bloom, consulting engineer in Philadelphia; the biggest news around their household is an expected arrival next March. A little local news from Boston; Al and Jackie Danzberger (and their four-year-old daughter) are leaving for California for about three months, where he is going to be a resident engineer on one of A.D.L.'s construction jobs. Now, back to the reunion.

Fortunately, the cocktail party followed the ball game and we had a noble opportunity to recover from the rigorous exercise. *This was it!* (Let's have two next time.) Don't know who drank the most, but Bob Piper (his date was Janet Aylward) was somewhere in the lead. (Friend Mandy is still looking for his bottle of champagne!) Bob got his master's degree from M.I.T. and apparently is taking a position as an aeronautical engineer with Trecom (U.S. Army) down at Fort Eustis, Va. It seems to me that Mike Maresca and Chuck Buntschuh managed to down their share at the party. Mike and Marie have two children; he is working for his Ph.D. as a teaching assistant at Brooklyn Polytechnic Institute. Chuck is back at Tech as a research assistant, though he got his master's degree in Germany. (Working on Ph.D., Chuck?) Also seen loitering at the party were Joe and Lu Woolsey. (Oh, they *did* have a ball.) They have three children, and Joe feeds the crew as a construction engineer with Burns and Roe, Inc. Another notable at the party was John Jeris, who is now engaged to Helen Jones. He is a sanitary engineer with D. E. Stearns, New York, and received his master's degree from M.I.T. in the interim. Dick and Sue Farrell were having a terrifically good time. They are living in Attleboro and have two children; he is doing sales work for Sprout Waldron and Co.

Badly in need of dinner, the crowd wandered across the hall to the banquet. We started off by singing (?) *Sons of M.I.T.* ...then food. Toward the end of dinner, the class business and entertainment was begun. Mandy announced the results of class elections: Paul Shepherd, President; Frank Turcotte, Class Agent; Martin Wohl, Secretary. A sincere vote of thanks was extended to the outgoing officers: George Stevenson, Jay Koogle, and Vince Bronson. Paul Shepherd was there and received the traditional gavel (you know, a five-pound wooden maul). Paul and Ginny have two children and are living in Reading. He is doing site engineering for Cabot, Cabot, and Forbes in Boston. George and Betty Stevenson were on hand; George is an electronic manufacturing representative for E. G. Holmes and Associates. They have a family of three children and are living in sunny Florida. Unexpected developments prevented Vince Bronson and George Fuld from coming to the reunion. Both served on the reunion committee, for which we gratefully say, "Thank you." Vince is still teaching and has a young daughter. George and Phyllis Fuld have one son and are living in Wakefield. George continued at Tech for his Ph.D. and is now an assistant professor in Food Technology.

The door prizes were won by George Hegeman's wife, Ruth, and Rog Johnson. Then it was felt advisable to award suitable gifts for certain achievements. Al Danzberger, as the tallest member of the Class, received a beautiful pair of stilts. Chuck Johansson—the oldest unmarried bachelor—was awarded a shotgun! Chuck is doing airborne electronic testing equipment work with Westinghouse in Maryland. Mike Maresca's wife, Marie, was the "class baby" (youngest wife) and given a baby bottle, complete with "fixture." Mac and Rusty Blair traveled the longest distance to come to the reunion and were rewarded with a pair of roller skates to insure an easier trip next time. Mac is an architect with Nat S. Sachter in Denver, and apparently he and Rusty love the Southwest. And who has the most children? You guessed it—our ole buddy Gil Gardner and his ever lovin' wife, Janie. It was a genuine pleasure to present them a hangman's noose; it should be quite helpful around the house. Gil and Janie are out at Mt. Clemens, Mich., where he is a flight instructor in the Air Force. (Oh, yes, they only have five children.)

Following the class awards, the joke contest got underway. Jay Berlove came up with his usual wit and walked away with the prize. Jay is working for Kroger Co. in Cincinnati as an industrial engineer, and is completing his studies for a master's at Xavier University. Of course a number of others told excellent jokes; among them was Sid Hess. Sid is in Cleveland, completing his doctoral work at Case Institute in operations research. Sid and Grayce have one daughter and apparently are anxious to earn a decent living after the long grind. The Zwerlings and Pickleses seemed to be having an extra good time at the banquet. Fred and Elie Zwerling are down at Syosset, N.Y., where Fred works for Triangle Sheet Metal Works, Inc., as the assistant secretary and treasurer. They have two children, but would like "one more child—then one dog." Fred also said, "It's nice to get together again." Don and Katherine Pickles apparently were living in Tarrytown, N.Y., at the time of the reunion, though Don has changed employment since then. He was working for M. W. Kellogg, but as of July 1 switched to Cryovac, a division of W. R. Grace (where, Don?). He and Kathy have one child. (Seems to me another is due.)

Brother Mark Schupack and his wife Helaine were their usual smiling selves, and delighted to be a part of the reunion. (Have a long newsletter from Mark, but will hold it until next month.) Both the Gardners and Shulmans were having a fine time. Norm and Joan Gardner are living in Cambridge where he is working for Nuclear Metals, Inc., as a development engineer. Norm finished up work for his M.S. at Pennsylvania State and his wife did graduate work at Tufts following graduation from Lesley. Jack (Yechiel) Shulman received his S.M. from Tech and is still there as a research engineer. He and Ruth have three children and are living in Cambridge. Both Norm and Jack were extremely helpful in contacting classmates for the reunion. Many thanks.

Joe Rodriguez is down in New York, working for Grumman Aircraft Engineering Corporation as an electronics engineer. Apparently he is taking graduate work at night and is receiving his master's shortly (already?). He and his wife are planning to

move to Long Island. Also, Joe intends to complete his Ph.D. at Brooklyn Polytechnic Institute. Julius and Ruth Honig are also down in New York, where he works for International Business Machines in Garden City as a mathematician. Julius has two master's degrees; one from M.I.T. in math, and the other from the University of Illinois in meteorology. They have two children. George Manahan is now working in Wellesley, Mass., for the Computer Control Company in an effort to feed a large family. He and Marian have three children. Dave and Shirley Berg are still located in Boston, where he works for Goldberg, LeMessurier, and Associates (consultants) as a structural engineer. Dave received his S.M. from Tech in the meantime. (I understand they are expecting another Berg.)

Some more prominent bachelors seen roaming around were Ed Butler, Rudy Kalman, and Alfred Switendick. Ed is another one of the class pilots, flying for Northeast Airlines out of Manchester, N. H. Rudy Kalman is now a staff engineer with International Business Machines in Ossining, N. Y.; he completed his Sc.D. at Columbia a short while ago. Alfred also is doing considerable graduate work, having received his S.M. and now working for his Ph.D. at M.I.T. while doing research. Ed Colbeth and Carl Wolf also belong in the select category of bachelors. Ed finished his M.A. at Columbia and is now working for the Martin Company in reactor physics. I think brother Carl is employed by Du Pont down in Wilmington, Del. (Carl, drop me a note with a rundown.)

Apparently three of our good men are leaving the ranks reasonably soon. Both Dick Linde and John Nervik are engaged, and Dick Marciano is "pinned." Dick Linde is engaged to Ruth Rosenberg, (married August 23?), and is continuing graduate work at New York University Graduate School of Business Administration. He is assistant technical director for American Cyanamid Co. in Brooklyn. John received his S.M. from Tech before going to work for Bell Telephone in New Jersey. His fiancée is Denise Hussa, but I do not know when the marriage date is. Dick Marciano is an engineer with Naval Underwater Ordnance Station in Newport, R. I., engaged in torpedo research and development. He is pinned to Betty LaFlame. When asked, "How many children?" his comment was, "Heavens—not yet!"

Sunday morning some of the crowd managed to make it to breakfast. Believe it or not, some even found enough energy to take in a brisk game of tennis or golf. Seems to me Bob MacDonald and Dick Chambers were out on the links. Bob is now working in Boston as administrative assistant to the president of Vappi and Co., a general contracting company. Prior to that he was at Harvard Business School and received his master's in business administration. He and Elaine have a seven-months-old boy. Dick is back at lovable ole M.I.T. as a research engineer, and has already received his S.M. He and his wife, Ann, apparently are anxious to enlarge their family, which at present consists of one child.

Roland Johnson is the third pilot who was at the reunion. He and Joy are living at Andover, Mass., and are expecting an addition to the family in the near future. (Would appreciate word on this.) Roland is

flying for Eastern Air Lines with Boston as home base. Al and Lois Hutchins were looking more than reasonably bright-eyed Sunday morn. They are living in Syosset, New York, where he is a project engineer with Fairchild Camera and Instrument Company. After getting his degree at Tech, Al went to Ohio State for his S.M. Ernest Rifkin is in the "boat business"; that is, he is a mechanical engineer in the Electric Boat Division of General Dynamics Corp., in Groton, Conn. He and Shirley have one child. Also, he is presently working for an advanced degree at the University of Connecticut. Bob and Peggy Tessier are out in Springfield, Mass., and have two children. Bob is an architectural designer with Henry J. Tessier (architects). Ed Healy also is an architectural designer, working for Tech-built, Inc., here in Cambridge. Ed and Nina have two children. Bob Colton is working nearby at the Watertown Arsenal as a metallurgist. He and Janis are living in Brighton. Bob received his M.S. from Chrysler Institute of Engineering at Detroit.

Around noon the clambake got underway. It was a fine way to close the week-end! We all proceeded to stuff ourselves to the bursting point, but loved it. The Cartwrights particularly enjoyed it (was it the food or the beer?) Joe is an engineer with NEGEA in Cambridge, and he and Marian are living in Needham. Prior to this he worked on the Enrico Fermi reactor while with Atomic Power Development Associates. Arthur Buckley is a consulting engineer with Anderson-Nichols and Co.; he and Lorraine are living at Salem, Mass., and have one child. Jim and Miriam Stoddard are also living closeby and have one child. He is working as a senior engineer at the new Sylvania Electric Products plant in Waltham.

In closing, let me say that it was a wonderful week end for all of us who attended. We do hope that the rest of our classmates can join us for the festivities at the 10th reunion. In addition, I would like to add that all notes, letters, and news will not only be gratefully received, but will be published. I will honestly do my best; but don't forget that my job will only be as good as your's.—
MARTIN WOHL, Secretary, Apartment 8-18C, 100 Memorial Drive, Cambridge 42, Mass.

1954

Here we are beginning our fifth post-Tech year. And speaking of fifths, our reunion plans are coming right along. Bob Anslow reports that the reunion will be next June 13 and 14. Tentative activities which are planned include "seaside type informal activities during the day, with a cocktail party, banquet, and dancing during the evening of the 13th; final clambake at noon on the 14th." Any volunteers or suggestions will be most welcome. In any event, plan to be in Cambridge on June 13. The location of reunion headquarters and other pertinent information will be soon forthcoming.

Dean Jacoby, after a long, hard battle, has completed the compilation of class statistics as gleaned from the questionnaires we sent out last December. We'll mention here some of the results; the complete tabulation will be available at the reunion. These results are based on the approximately 30 per cent of the 675 questionnaires which were returned. 52 per

cent of the members of the Class who returned the questionnaire now live in a geographical district different from their original home district. 36 per cent are now living in New England; 28 per cent are living in the New York-Middle Atlantic area; 15 per cent are in the North Central area. The rest are scattered across the country, except for 5 per cent living in foreign countries. 62 per cent have gone back to school since graduation, and another 7 per cent are planning to do so. 71 per cent of those gainfully employed are engaged in work directly related to the Course in which they graduated. Among those members of the Class with full-time employment, the median annual income is \$7,000. The high income reported is \$11,000 and the low is \$4,000, again among those with full-time employment. 62 per cent are married, and 66 per cent of these have children. 60 per cent have served in the Armed Forces; and of these 84 per cent have been officers. 94 per cent agreed that M.I.T. prepared them well for their present occupation. 87 per cent said that they would send their sons and daughters to M.I.T. if they desired, and another 7 per cent said they would send a son but not a daughter. These represent the high lights of the results of the questionnaire; the complete tabulation is much more detailed.

Turning now to individual members of the Class, we have several announcements of weddings. Dave Wones married Constance Gilman in Ayer, Mass., on August 24. Charley Burnham and Mary Sue Morgan were married at Grosse Pointe Farms, Mich., on June 21. Bob Reichard and Jacqueline Anne Daigle said their vows in Newport, R.I., on May 24. Guerdon Coombs married Jeannette Rita Gregoire in Sidney, N. Y., on April 7. Bard Crawford and Jane Tibbetts were married in Ridge-wood, N. J., on May 10. And Al Bachelder married Mary Helen Porter in New Haven, Conn., on April 26.

Among the letters received during the summer was one from W. Carleton Bartow, Jr., who reports, in the clearest of script, that he is "head of production control (whatever that means) in the Industrial Tube Division of the Raytheon Manufacturing Company," and is "happy for the moment (Course XV man, you know)." W. Carleton is living in Belmont, Mass. Jerry Cohen writes that he and his wife Lois have returned from their Fulbright sojourn in Paris and have settled in Arlington, Mass. Jerry is a senior scientist in "Avco's 15 million dollar missiles laboratory" in Wilmington, Mass. Jerry says that he and Lois spent two weeks in Paris with Larry Leonard and his wife Margie; the latter spent the summer honeymooning in Europe. Matt Baczewski informs us that he, Roy Riedinger, Kevin Woelflein, and Tom Gross received their master in business administration degrees from the Wharton Graduate Division, University of Pennsylvania, in June. Dean Jacoby sends word that Art Haines has finished up at Harvard Business School and now is in sales engineering with the Hewlett-Packard Company in Palo Alto, Calif. Bob Law has finally become adjusted to civilian life and is an industrial engineer for Procter and Gamble. Bob is living on Staten Island, N.Y. And finally, Dean reports that Dianne Grant, who was Inscom secretary during our senior year,

was married to Mr. Wallace William Freeman in Oberursel, Germany, on July 17. What's the latest word about your activities? —EDWIN G. EIGEL, JR., *Secretary*, 3654 Flora Place, St. Louis 10, Mo.

1954G

During the summer months I learned that some of our classmates made news in widely varied fields. Dr. Richard S. Eckaus of Cambridge, current research associate, Center for International Studies, M.I.T., has been promoted to associate professor of economics at Brandeis University. Newly elected president of the Young Israel Congregation of Brookline is H. David Neumann, engineer at Lincoln Laboratory.

In the field of technical papers, James G. Nelson, with the Minneapolis-Honeywell Regulator Co., presented the "Automation of Floated Gyro Drift Measurement" at the Institute of Radio Engineers, second national conference on production techniques, in New York City. Also in June was the wedding of Miss Linda Ruth Zeller, of Sewickley, Pa., to Dr. Daniel Williard, Associate Professor of Physics at Virginia Polytechnic Institute.

Dr. Leon Pocinki is back at M.I.T. studying about high-speed computers. In 1955 he joined the Operations Evaluation Group, and spent last year attached to Navy staff at Norfolk, Va.

News for these columns is very sparse, so please don't hesitate to write to us.—NEWTON SHANBROM, *Secretary*, 824 Gilmore Drive, Reynoldsburg 26, Ohio.

1955

Golly, it's hard to know where to begin as I sit here surrounded by news items! What joy! Let's take congratulations first, for there are many deserving souls in this department. The engagement of Bob Posner to Carol Handler, Radcliffe '57, presently an architecture student at M.I.T. was announced this summer. The wedding was scheduled for September 7 in New York City, and Bob and Carol are now living in Cambridge.

June and therabouts being the time of many weddings, this year was certainly no exception. Barbara Pullen of Wellesley, a '56 graduate of Smith, and Fred Morgenthau were married on May 17 in Wellesley Hills in a ceremony well populated by Tech men. Participants included Al Schell and Eric Thomson of our Class, also Fred's brother, John, '51. Also in late May the marriage of Ken Fletcher to Rosamond Wile took place in Lowell. Ken's bride is an alumna of Bennington; they are living in Westford. Eli and Anne Huggins had an exciting honeymoon in June, sailing along the Maine coast, before taking up residence in Dover, N. H. Anne is the former Anne Walp of San Francisco, where their wedding took place. She has studied at Scripps College; Université de Rennes, France; and the California School of Fine Arts. Since leaving M.I.T., Eli has been pursuing his Ph.D. in physics at California Institute of Technology and teaching there. Herbert Hultin claimed Marie Lutes of North Quincy as his bride on June 29 at a ceremony in Saugus. Marie, a Chandler alumna, and Herb are now in Hingham (having spent their honeymoon on Cape Cod), while Herb

continues work for his doctorate at M.I.T. Hugh Hare and Penelope Sinclair of Warrenton, Va., a Skidmore graduate, were wed in Warrenton on July 5. They are living in Boston, where Hugh is attending the Harvard Medical School. Also on July 5 Sture Bengtson married Miriam Kent of Greenwich, Conn., a Simmons alumna. The Bengtsons traveled to Nova Scotia for their honeymoon before making their home in Brookline. Fran Selvitelli returned from his duty with the Army in Germany long enough to claim a bride and take her back with him in July. Fran was married to Claire Merner of West Roxbury, a '56 graduate of Emmanuel College, in another ceremony with numerous M.I.T. participants including Leo Keane. Scituate Harbor, the home of Janet Ann Ohrenberger, was the site of her marriage to Walter McCarthy in July. Janet, a graduate of the Boston College School of Education, has been teaching in Sandpoint, Long Island. The McCarthys are living in Flushing. Charles Henry and Judith Ropper of Gloucester were married in the M.I.T. Chapel on July 17. A '57 graduate of Westbrook Junior College, Judith has been working at the Children's Hospital in Boston. The Henrys honeymooned cruising up the Hudson River to Lake Champlain before returning to Boston for Charles to complete work for a September degree in naval architecture at M.I.T.

That completes the weddings; but other causes for congratulations, awards of one kind or another, have been nearly as numerous. A delightful letter from Sandy Goldman told, among other items, of his departure in August for a year of study at the Delft Technische Hogeschool in The Netherlands. Sandy, who received a Fulbright grant, will be working in the Laboratorium vor Electrophysik there after a visit to the Brussels Fair and is most eager that anyone happening to be in Holland look him up. Sandy was working at the Lincoln Laboratory until August after a one-semester stint as an instructor in the Electrical Engineering Department at Columbia. Shimshon Frankenthal, now working for his doctorate at M.I.T., has received a fellowship from the General Electric Company; and Lewis Pilcher, at California Institute of Technology since 1955, is the recipient of a grant from the Hughes Aircraft Company, combining graduate study with work at Hughes research laboratories in Culver City. Fred Hennie was one of five graduate students in the Electrical Engineering Department at M.I.T. to receive an award this spring for excellence in teaching. Fred had worked at Minneapolis-Honeywell and the New Jersey Bell Telephone Laboratories before returning to M.I.T. for his master's degree, due in June, I believe.

Four members of our Class received degrees in June from the Harvard Law School: Sheldon Busansky, Eugene Davis, Eldon Reiley, and Jim Storey. Eugene and Constance Davis are now living in Stamford, Conn., where he is affiliated with the firm of Blair and Spencer. Not far away in Rye, N. Y., and very close neighbors of Pete and Jane Toohy, are Jim and Carrie Storey. Jim is with the New York City firm of Ford, Bacon, and Davis. Eldon Reiley is back in his home state with Paine, Lowe, Coffin, and Hermari in Spokane, Wash.

A great letter from Dave Wilbourn told of his anything-but-dull experiences with the Army at Fort McClellan, also of his prospective exodus from the Army in September after about two years in the Heart of Dixie. Bill Chandler, again a civilian, is now in Cloquet, Minn., working with the Northwest Paper Company. Paul Lualdi, who entered the Army last November after working with the Electric Boat Division of General Dynamics in Groton, is now working in the Army's recently completed nuclear power reactor laboratory at Fort Belvoir and living in Washington, D.C. The Dave Brookses are still making their headquarters in Denver; they write that they recently ran into a geology classmate, Dan Huckins, formerly with the Bear Creek Mining Company in Safford, Ariz., who has left to work with a gold mining company in Canada. Speaking of geologists, where's Charlie—Prewitt, that is? Not a trace of him for ages.

Glenn Jackson wrote recently that he was on his way to Jacksonville, Fla., and a new position with Dewey and Almy, for whom he has been working in the Boston area since his release from the Air Force last January. He extends a welcome to anyone who might be passing through that area. Glenn also tells that Roger Mackay is back from Army duty in Germany and now a chief road building engineer for the state of Maine.

As for our other secretary, the peripatetic one, Denny wrote in late August that he had just completed some very interesting work on the nuclear tests, commuting between Johnson Island and Hawaii. He was whisked from Greenland to the Pacific shortly after the last notes were finished and is now off on a 60-day tour of India and Japan before returning to the U.S. to complete his Air Force duty. As for me, I am teaching at the Wilmington Friends School, physics and math, expecting to enjoy this new venture very much. Writer's cramp is a delightful sensation when it comes from these notes; do inflict it upon me more often!—MRS. J. H. VENARDE (Dell Lanier), Secretary, 107 Mullin Road, Wilmington 3, Del. FIRST LIEUTENANT LABAN DENNIS SHAPIRO, Assistant Secretary, CR21 GRD AFRCR, Bedford, Mass.

1956

The vacation has ended on a sad note. On August 13, Philip Kimball died unexpectedly while working with an oil exploration team in the Amazon basin of Brazil. Since graduation Phil had been employed by Geophysical Service, Inc., in the southwestern states and in Brazil since the first of the year. While at Tech he was a resident of Connor Hall and a member of our Henley crews. In December, 1956, he wed Janet Newall of Belmont. To those of us who remember Phil from Connor this is a sad and unexpected loss from the Alumni group, and from the whole group we wish to extend our sympathy to Phil's wife and family.

News from the past recession: few professional personnel were on the jobless list and in many fields there was a shortage of qualified problem solvers. The big differences seem to be the absence of advertising coupled with the fact that companies have expected the job hunters to do the hunting, a buyers' market. This reversal of the trend

caught the seekers in their ego and was first reported as a job shortage.

News from the matrimonial columns: Donald Bavy married Beverly Gann of Newton Center in June (incidentally a next door neighbor of my wife's family). Don is employed as a math analyst and computer programming supervisor. Pedro Calacterra wed Anne Marie Crowley of Stoughton in June. Paul is attending graduate school at Tech. Edward Copps exchanged vows with Nancy Bucklin of Providence, R.I., in September. John Cowles wed Diana Armen of West Lebanon, N.H., in June. John received his master's from Tech in June and is studying for his doctorate at the University of Michigan. James Freeman married Elaine Estelle Taylor of Scarsdale, N.Y., in July. Lawrence Hallee wed Priscilla Jeanne Deering of Hartland, Maine, in June. Morrin Hazel wed Sara Anne Walkinshaw of Arlington in August. William McNulty married Nancy Catherine Ryan of Pelham, N.Y., in July. The article also mentioned that Bill heads the Mechanical Engineering Department of Sensitive Instrument Corp. Looks like quite a summer for Bill. Simon Moss wed Margaret Bentley Benedict of Fair Haven, Vt., in April. Simon is attending graduate school at Tech. John Reynders married Sara Jordon Ritchie of Harrisburg, Pa., in May. John has been with the Signal Corps in Germany. Our group's preference for eastern young ladies seems to have swept the field this summer.

Reaching back into the past we find a few of our group were employed by Sperry Rand during the summer of 1957. Robert Hockman and Edward Konik were in the Fighter Flight Control Department, and Hugh Bradley in the Systems Research Department, all of the Aero Equipment Division. Albert Ender was in the Analog Systems Development Engineering Department of the Air Armament Division. Gad what a bureaucracy!

Charles Hazard is a research engineer at United Shoe Machinery Corp., in Beverly. Harry Heath is employed in Du Pont's Belle Works in West Virginia. John Merkl was a management trainee at Harris Intertype Corp. in Rhode Island last spring and is enrolled in Harvard Business School this fall. Arthur Silver purchased Goodhue's Restaurant in Leominster in April. Joseph Boisvert is employed by Franki of Canada, Ltd., in the town of Mt. Royal, P.Q., Canada.

Our illustrious and reknowned "A #2" secretary, Philip Bryden, officially received his master of science in experimental psychology at McGill University in May. After reading a paper entitled "The Role of Eye Movements in Perception" before the Canadian Psychological Association in Alberta, our glorious leader toured the western provinces. Late in the summer he read a paper before the American Psychological Association in Washington, D. C., and has now retired to the ivy covered halls to work on his doctorate.

Hope you will refer to the July Tech Review 1955 notes to read about two of our group, Ellen Dirba and Charles Greene.

After attending several Alumni club meetings it is obvious that they suffer from the same apathetic attitude of Alumni as other organizations. A maximum effort means membership of about 50 per cent of Alumni in the area and attendance of 25

percent at a meeting. The area clubs offer a great variety of entertainment and social contact with other professional people and their families. To those who avail themselves of the opportunity the meetings can be stimulating.

By spring this lowly #1 boy will jot the notes from far up in the 49th state guarding you of the interior.—BRUCE B. BREDEHOFT, Secretary, 1528 Dial Court, Springfield, Ill. M. PHILIP BRYDEN, Assistant Secretary, 3684 McTavish Street, Montreal 2, P.Q., Canada.

1956G

Begging your pardon for a few months absence from delivery of news, we feel that this month's column will be a good time to repent and catch up in preparation for a whirl-wind of reporting.

The Public Relations Office of Eastman Kodak has sent us a good biographical sketch on one of our classmates, Wylie S. Robson. In 1938, he began with the company as a trainee. His apprenticeship soon gave rise to Wylie's appointment as general manager, Pacific Northern Sales Division in San Francisco, Calif. In 1955, the company sent Wylie to M.I.T. for a year of training in Industrial Management. In June, 1956, he completed Sloan Building's curriculum and was given a special marketing assignment with the parent organization in Rochester, N.Y. By a recent promotion, Wylie was made assistant to the director of sales administration, where "he will be responsible for co-ordination of operations among the company's U.S. sales divisions, in addition to other duties."

A former University of Minnesota man and M.I.T. architecture graduate, Thomas Hodne writes: "I will be a consultant for a planning project in Cleveland, Ohio—Ohio City Center—Professor and Head of the Department of City Planning, M.I.T., John T. Howard '35 will collaborate as a special planning assistant." Tom is assistant professor of architecture at North Carolina State College, Raleigh, N. C.

Another graduate student 1956G, Neal Wade, Jr., has returned to resume his career with American Telephone and Telegraph Co. in Cincinnati, Ohio. His new post is plant superintendent for the Long Lines Department. Neal has been with A.T. and T. since 1949.

Dr. Theodor Liss has settled in Wilmington, Del., at 2515 West 18th Street. Upon leaving M.I.T., he carried out further research at the University of Munich in Germany on the award of a National Science Foundation Post-Doctoral Fellowship. His present professional activity is being conducted at Du Pont in their Organic Chemicals Research Division.

In Saint Anthony's Church, Fort Lauderdale, Fla., Frank White was married to the former Jeanne Marie Foucher, a graduate of Boston's School of Practical Art. Frank had returned to Georgia Tech, his undergraduate alma mater, to accept a faculty position and pursue a Ph.D. program. Still another 1956G wedding was held for the marriage of Eugene Friedrich and the former Gael Grant of Andover, Mass. Eugene and Gael have made their home in Williamsburg, Va. Eugene's note stated: "I have been assigned to work for the National Advisory Committee for the

Air Force. I am working as an aeronautical engineer in the Structures Division. Primary concern is with high temperature structural sandwich configurations."

Other correspondents, to whom gratitude is felt, have been John Pacey, Jr., who has been moved to the San Francisco office of Bechtel Corp.; George Warren Patterson, 9 Baldwin Street Newton Center, Mass.; Ulrich Hoffman from the Louviers Building, Du Pont, in Wilmington, Del.; and Dr. Forrest Getzen, physical chemist with Humble Oil and Refining in Houston, Texas—CHARLES T. FREEDMAN, *Secretary*, Lieutenant(jg), U.S. Navy, USS Saratoga, CVA-60, FPO, N.Y. N.Y.

1957

Late last May, Jules Bryon wrote from Fort Lee: "I am getting married to a young lady, Elaine Peiman, on June 22 in New York. Jack Safirstein and Gerald Marwell will be among the ushers. After I get out of the service (July 13), we plan to take a honeymoon trip of about three to six weeks around the country. After the honeymoon, we will settle in New York. I am going back with Arthur Anderson and Co., and Elaine will finish college. I had been attending Columbia at night for my master's in industrial engineering. Jack Safirstein is here at Ft. Lee, as are Bob Palter, Bill Alcorn, Harry Salesky, and John Roberts. Jack tentatively plans to go for a master's degree at one of the schools in Boston. Billy Schoendorf is getting married to Ellen Weber in New York in June. At that time he should be receiving his master's in electrical engineering from the University of Pennsylvania. Jerry Marwell is studying for his doctorate at New York University in sociology. Jerry is married now and has an apartment in Brooklyn."

Apology Department: last spring reported the National Science Foundation fellowship winners but failed to mention Bob Rosin, who also bagged said fellowship for 1958-59. Bob is now at Michigan, out of psychology and in an interdisciplinary program called Language Models and Logical Design: sort of a combination of mathematics, psychology, electrical engineering, and philosophy. Bob spent the summer once again with International Business Machines, studied Russian at Berlitz, and took an extended canoe trip through uncharted Canada.

Bob Piccus is back at the Harvard Business School, as is Ed Schuman. Ed is married to Toni Deutsch '58, our senior week treasurer. Ed worked for Avco last summer designing missiles, while Toni is with the Boston Naval Shipyard designing ships of the fleet. They have settled in a very comfortable apartment off Harvard Square, an outstanding feature of which is their joint collection of Tech "bibles," the largest I've seen outside of the memorable Burton House cache.

Speaking of the Business School, Art Schultz who is now in his second year there and who had planned to spend last summer in New York but went to New Hampshire instead, writes in part as follows: "Never let it be said that Art Schultz was one to be baffled by a mere 300 miles. I am determined that you're going to buy me a drink in New York this summer; and if I can't drink it in person, I'll use a proxie.

You'll be interested to know that I've appointed an official drinking proxie in New York who...."

Early this year Tom Ahrens became engaged to Earleen Fullinwider of Monrovia, Calif., and the June wedding took place in Beverly Hills. Tom has added another sheepskin, a masters in geophysics from California Institute of Technology. Tom is now working in Salt Lake City for Pan-American Petroleum. Mike Brenner married Elsa Claman of Hewlett, Long Island, June 23. Paul Duevel wed Janet Ward on July 12 in New London. Paul is a U.S. Navy ensign stationed in San Diego.

News of the Stork Market: to Ellie and Ira Skalet, a boy, Paul Bennett Skalet '80, April 18, 1958, 8 pounds, 12 ounces.

Hank Salzhauer, Ed Roberts, Marty Forsberg, and this correspondent represented '57 at the recent Alumni Fund Conference at M.I.T. Ed tells me that our class gifts topped every class back to '49 in average contribution per contributor, *but* that we are sorely lacking in per cent of total class participation. You men receiving The Review can assist us by reminding the other Class Alumni of their role in helping maintain M.I.T. as the outstanding educational institution which it is.

We have done a bit of talking about issuing a '57 class directory with names and addresses. Our principal reason for temporarily deferring this project is that you men are constantly moving about, changing addresses, and so forth, what with the military, graduate school, and job training programs. Please let us know when you do change your address.—ALAN M. MAY, *Secretary*, 55 East End Avenue, New York 28, N. Y. MARTIN R. FORSBERG, *Assistant Secretary*, 383 Harvard Street, Cambridge, Mass.

1958

Hello again and welcome to '58's little corner here at the tail end of the class notes section, as we pick up where we left off in the July issue. To many, the halls of Building 10 must seem awfully far away, for the Class of 1958 has scattered to the four corners of the earth in these few short months since Graduation Day. As a class, we certainly have already been quite active in the academic and vocational departments, and in the matrimonial field as well. From the large stack of notes and clippings before me, I can see that it will be at least a month or two before I'll be able to pass along all the information I've already accumulated. So please be patient and "watch this space for further announcements."

First of all, I'll start by relating some of the summer's results of postgraduation treks to the altar. Elliott Myers, II-B, was married to Fay Gibley of the Chandler School and Peabody, Mass., in the M.I.T. Chapel shortly after graduation. Elliott will be working for Ford's research division in Detroit. Pete Carberry, IV-A, entered wedded bliss on June 28, marrying Dianne Condon of Worcester, Mass., in Kennebunkport, Maine. Dianne attended the New England Deaconess Hospital School of Nursing in Boston, and she's a staff nurse at the hospital. They'll be living in Boston. Chester Day, S.B. and S.M. in VI-A, took the big step with Deena Verre of Scotch Plains, N. J., in July. They'll be living in East Orange, N. J., where the missus will matriculate at

Upsala College while hubby labors at Bell Telephone Laboratories in nearby Murray Hill. Kenny Auer, X, was wed in Concord, N. H., to the smiling little Tech-retary, Mary O'Clair. Ken will be with the development department of Columbia-Southern Chemical Corporation, with a short time out coming up in favor of the U. S. Army Chemical Corps as an "R.O.T.C. second-louie" beginning in September.

The Gottlieb brothers (Mike, X, and Rich, VI), continue to confuse everyone, especially yours truly, by entering the state of matrimony in rapid-fire succession. Mike led the way by marrying Juliet Piner of Brookline and the Boston School of Occupational Therapy in late June in Boston. Not to be outdone, Rich quickly followed suit by wedding Roberta Siroto of Chestnut Hill, Mass., and Endicott Junior College soon after, also in Boston. There the similarity ended, however; for Mr. and Mrs. Mike honeymooned in the Virgin Islands and Puerto Rico and then returned to make their home in Mount Vernon, N. Y., while Mr. and Mrs. Rich spent their wedding trip in Jamaica and will live in Asbury Park, N. J. Another '58 grad to head for the altar soon after graduation day was Chuck Henry, XV-A, who married Marcia McClellan of Saugus and Boston University on July 12. Chuck, an Air R.O.T.C. officer, is in school out in Denver, Colo., through the courtesy of Uncle Sam's Air Force. Also, there was the marriage of Brad Clough, XIII, to Judith Anne Salomon in July. Brad's bride is on the faculty of the New England Baptist Hospital School of Nursing.

Larry Casellini, II, married Edith Lawson of Barre, Vt., soon after graduation. Edith graduated from the University of Vermont in June, while Larry, who was at Tech on the three-two plan from Middlebury College, got both his B.A. (Middlebury) and his B.S. (M.I.T.) in June. They'll be living in Groton, Conn., where Larry's employed by the Electric Boat Division of General Dynamics Corporation. Basketball star Norm Howard, XV-B, wed Emilie Andrews of Melrose, Mass., on the day after graduation, June 14. After spending their honeymoon on Cape Cod, the couple returned to take up residence in Norm's home town of Winchester, Mass. Finally, I would certainly be amiss in failing to mention that Course II's favorite co-ed, Toni Deutsch, entered wedded bliss two weeks before graduation. Her marriage to Ed Schuman (Tech, Class of '57) was performed at her home in New York City on May 31. They'll be residing back here in Cambridge, since Ed is now in the Graduate School of Business Administration at the little brick schoolhouse further up the Charles.

Realizing that this is just a small start on a long list, I'll save some of the further news on the attrition rate in our ranks of bachelorhood for succeeding months and turn instead to other fields of '58 endeavor. Some of the vocational and academic locations of the recent grads have already begun to reach me, but the list is of course as yet largely incomplete. Charlie Robbins, VIII, is a physicist (naturally) at the Machlett Labs in Stamford, Conn., where he'll be living with wife and daughter Cathy. Ottello Breda, I, is with Standard-Vacuum Oil's Far Eastern operations; Andrew Chen and Bob Hausslein, both X,

joined DuPont's Polychemicals Department and will be working at the company's experimental station in Wilmington, Del. Another Course X man, George Crafts, is making pilot-plant studies of petroleum processes for the Whiting Research Laboratories of Standard Oil of Indiana in Whiting, Ind. Stu Mapes, a Course VI man from my home town of West Hartford, Conn., is an air research and development officer at Wright-Patterson Air Force Base in Ohio after graduating as an Air Force R.O.T.C. second lieutenant. Doug Johnston, III, was appointed assistant secretary of the Metallurgy Society in New York City, assisting in co-ordinating activities of technical committees and arrangements for technical conferences. The Society is a constituent organization of the American Institute of Mining, Metallurgical, and Petroleum Engineers.

I had a short note from Bob Hecht, VI, just before he left to take up his Fulbright

scholarship studies in Electrical Engineering and "Sensory Perception" at the Technische Hochschule in Stuttgart, Germany. He says he hopes to switch from E. E. to Physics when he returns to this country in August for further graduate work, "hopefully at California Tech." I also had a couple of letters from a coursemate and roommate of mine as an undergrad, Lou Bangert, II. It's good to hear he survived the red tape of security clearances and seems to be doing fine in the propulsion section at Convair's Fort Worth plant. He says he'll be taking a course at Southern Methodist University on the side.

An interesting note on the academic level comes from the May 1958 issue of the *Journal of Applied Physics*. The authors of a treatise on "Thermal Restoration of Oxygenated Germanium Surfaces," all from Lincoln Laboratory, included Allan Rosenberg, III. Certainly *sounds* hairy enough, anyhow!

And lest we forget the higher degree graduates of the Class of '58 'ere we part, Dr. Donald Ayer (Ph.D. Chemistry and B.S. from Yale) has joined the Department of Chemistry of the Upjohn Corporation of Kalamazoo, Mich. Dr. Grant Wilson (Ph.D. Physical Chemistry and B.S. from Brigham Young) is with Shell Development Corporation as a chemist. Also, Dr. D. William Lee (Sc.D. Ceramics and B.S. from Bethany College in West Virginia) is on the research staff for Du Pont's Central Research Department.

Space, not news, dictates that this be all for the time being. But there are many issues to come in which to disseminate the varied activities of the Class of '58, so as they say at the most exciting point in the mystery magazines: (to be continued).—ROBERT E. JORDAN, 3D, President, Apartment 2, 19 Everett Street, Cambridge 38, Mass.

HERBERT G. JOHNSON, *Secretary-Treasurer*, 484 Beacon Street, Boston 15, Mass.



and the prophet replied:

*"It is well to give when asked, but it is better to give unasked, through understanding."**

Gifts by Will

TO THE

Massachusetts Institute of Technology

The tale is told of Almustafa, the prophet, who, having awaited for many years the ship that would return him to the place from whence he came, was making the final descent to the shore when the folk of Orphalese crowded about him. They besought him before departing to "disclose us to ourselves, and tell us all that has been shown you of that which is between birth and death."

With words of wisdom, an answer appropriate was given to the woman holding a baby, to the ploughman, to the merchant. Begged one, "Speak to us of GIVING," and the prophet replied:

"It is well to give when asked, but it is better to give unasked, through understanding;

And to the open-handed the search for one who shall receive is joy greater than giving. All you have shall some day be given;

Therefore give now, that the season of giving may be yours and not your inheritors."

Through the years the prophet's words have held true, for even today he who "through understanding" includes the MASSACHUSETTS INSTITUTE OF TECHNOLOGY as a beneficiary in his will can experience thereby a two-fold satisfaction. The successful culmination of his search for a worthy recipient and the anticipated results his generosity will assist in accomplishing. These satisfactions give an added value to the span of man's days and project his usefulness to his fellowmen far into the future.

The Massachusetts Institute of Technology because of the high quality of the education given its students, its effective research work for aiding America in peace as well as in war, and the high character of its governing body and academic staff qualifies as an institution for serving our American ideals for the present and in the years to come.

But the search, the finding, and the anticipated accomplishments are not enough; for without the properly-worded record, man's plan for the future may go awry. Hence the prophet's importuning, "—give now," should be heeded. The giving need not be an immediate physical transaction, for written directions replace the spoken word when the speaker is no longer present, and a donor can frequently make by will a gift which is larger than he can make while living. Truly, *"it is well to give when asked, but it is better to give unasked, through understanding."*

A booklet "Gifts by Will," outlining different forms of bequests to M.I.T., is available to you or to your attorney by writing to:

Director of Development

Massachusetts Institute of Technology

Cambridge 39,

Massachusetts

* "The Prophet" by Kahlil Gibran

FORMALDEHYDE • CHARCOAL
 MAGNESIUM • CAPROLACTAM
 UREA PRILLING • ISOBUTANOL
 MELAMINE • ACETIC ANHYDRIDE
 NITRIC ACID • METHANOL
 CHLORINE • DYNAMIDE
 STEARYL • PIC ACID
 SULFUR • NITRATE
 METHYL • COHOL
 ISOPROPYL • THANE
 PHOSPHORIC • C ACID
 ACRYLIC • ILORITE
 DICYANDIAMIDE • SULFATE
 HYDROGEN • TIC POTASH
 CALCIUM CARBIDE • AMINES
 FATTY ACIDS • ACETALDEHYDE
 DICHLORODIFLUOROMETHANE
 MERCURY CELL CAUSTIC SODA
 AMMONIA • CARBON BISULFIDE
 POLYVINYLACETATE ^AND ^D CHLORIDE
 NITROPHOSPHATE FERTILIZER



CHEMICAL
 PROCESS
 DESIGN

THE **UHDE CORPORATION**

350 FIFTH AVENUE, NEW YORK 1, N.Y.
 8204 Empire State Building

NEW type W20 Variac®

Autotransformers

A new 20 ampere model of the popular Variac types W2, W5, and W50. Wrought metallic parts for improved mechanical properties. Better heat transfer between coil and base — brush and radiator. Ball bearing models are stock items. Motor Drives are available. All with exclusive DURATRAC Contact surfaces for long, trouble-free life with low maintenance.



Type W20 Variac
115-Volt Input; 3 KVA; 26 Amp. Max. Current
(W20H similar except for terminals and dial)

For back-of-panel use on switchboards or built into other equipment. Also usable on table or bench.

	W20 Uncased	W20M Cased	W20MT3 Portable	W20H Uncased	W20HM Cased	W20HMT3 Portable
Input Voltage	115	115	115	230	230	230
Load Rating (kva)	3.0	3.0		2.4	2.4	
Output Voltage	0-135	0-135	0-135	0-270	0-270	0-270
Rated Current (amp)	20	20	20	8	8	8
Maximum Current (amp)*	26	26	20	10.4	10.4	8
No-Load Loss at 60c. (w)	27	27	27	27	27	27
Dial Calibrations†	0-115 0-135	0-115 0-135	0-135	0-230 0-270	0-230 0-270	0-270
Angle of Rotation (deg.)	320	320	320	320	320	320
No. Turns on Winding	170	170	170	340	340	340
D-C Resistance of Winding (Ω)	0.21	0.21	0.21	1.6	1.6	1.6
Driving Torque (oz.-in.)	55-110	55-110	55-110	55-110	55-110	55-110
Net Weight (lbs.)	21½	24½	28½	20½	23½	27
Code Word	FEDAL	FEDER	FEDOM	MEPAL	MEPER	MEPOM
Price	\$45.00	\$58.00	\$87.00	\$47.00	\$60.00	\$85.00

*For "0 to line-voltage" connection only.

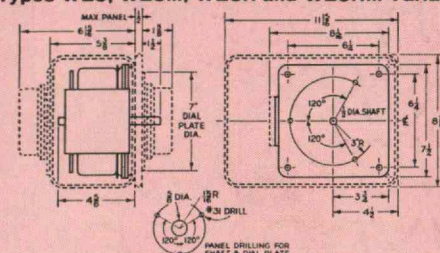
†Portable (MT3 and HMT3) models are wired for over-voltage connections and have corresponding dial scales. Line voltage connections and dials supplied on special order.

Types W20 and W20H Variacs are approved by the Underwriters' Laboratories.

All Type W20 Variacs can be supplied with ball bearings. Add suffix BB to type number, and following surcharge to prices: — Single, \$2.00; 2-gang, \$10.00; 3-gang, \$12.00.

Replacement Brushes — W20; W20M; W20MT3 = Type VBT-8, \$2.00 W20H; W20HM; W20HMT3 = Type VBT-12, \$2.00

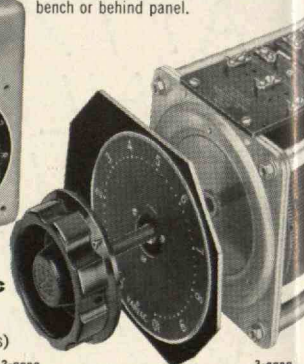
Essential Dimensions Types W20, W20M, W20H and W20HM Variacs



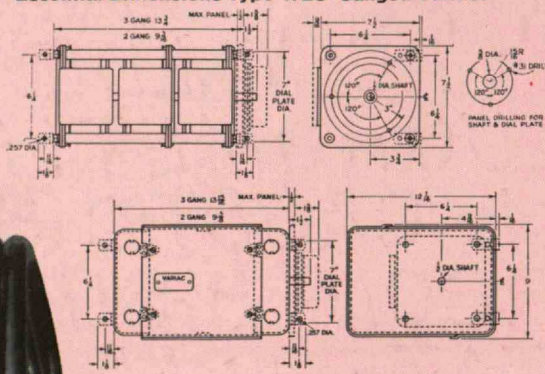
Type W20G3M Cased Model in aluminum case, gray enamel finish. Two knockouts on end and one on each side for conduit or armored cable. Front half of case easily removed. Simple to install on wall, bench or behind panel.



Type W20G2 Variac
2-Gang Type W20
(W20HG2 similar except for terminals)



Essential Dimensions Type W20-Ganged Variacs



	2-gang			3-gang			2-gang			3-gang			
	W20G2 Uncased			W20G2M Cased	W20G3 Uncased		W20G3M Cased	W20HG2 Uncased			W20HG2M Cased	W20HG3 Uncased	
Input Voltage	115	115	230	Same as W20G2	115	230	Same as W20G3	230	230	460	Same as W20HG2	230	460
Load Rating (kva)	6 (parallel)	5.2 (Delta)	6 (Series)	Same as W20G2	9 (Parallel)	10.4 (Series)	Same as W20G3	4.8 (Parallel)	4.2 (Delta)	4.8 (Series)	Same as W20HG2	7.2 (Parallel)	8.3 (Series)
Dial Calibrations	0-10			0-10	0-10		0-10	0-10			0-10	0-10	
Driving Torque (oz.-in.)	110-220			110-220	165-330		165-330	110-220			110-220	165-330	
Net Weight (lbs.)	43½			48	64½		71	41			45	61	
Code Word	FEDAL GANDU			FEDAL BONDU	FEDAL GANTY		FEDAL BONTY	MEPAL GANDU			MEPAL BONDU	MEPAL GANTY	
Price	\$100.00			\$125.00	\$147.00		\$175.00	\$104.00			\$129.00	\$153.00	

Type W20MT3 Variac

(Type W20HMT3 similar except for dial)
NEW Portable Model, cased, 3-wire output receptacle, ON-OFF switch, over-load circuit breaker, heavy-duty 3-wire line cord and plug.

GENERAL RADIO Company

275 Massachusetts Avenue, Cambridge 39, Mass., U. S. A.

NEW YORK AREA: Tel. N. Y. Worth 4-2722 N. J. Whitney 3-3140 CHICAGO: Tel. Village 8-9400
PHILADELPHIA: Tel. HANcock 4-7419 WASHINGTON, D. C.: Tel. JUniper 5-1088
SAN FRANCISCO: Tel. WHitecliff 8-8233 LOS ANGELES 38: Tel. HOLlywood 9-6201
In CANADA, TORONTO: Tel. CHerry 6-2171



WE SELL DIRECT. Our District Sales Offices are staffed by engineers especially trained to help you in the selection of instruments and measuring systems best suited to your needs. We welcome your inquiries — we will help solve your problems.